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Indigenous Knowledge and Language: Decolonizing Culturally Relevant Pedagogy in a Mapuche Intercultural Bilingual Education Program in Chile

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This article illustrates how Mapuche Indigenous knowledge (Kimiün) and language (Mapudungun) incorporated into an Intercultural Bilingual Education (IBE) program of a school in a Mapuche context in Chile creates decolonizing counter-hegemonic narratives as forms of culturally relevant pedagogy. Based on a six-month school ethnography, this study focuses on the role of an ancestral educator (Kimche), who as a teacher in the IBE program becomes an agent of Indigenous cultural and linguistic transmission as he brings Indigenous knowledge into the classroom as his main curricular objectives. Framed in the complex historical, sociocultural, and political contexts of Indigenous education in Latin America and in Chile, this article highlights the current debates about IBE inside and outside Indigenous communities, which are defining the sustainability of these programs.

Introduction: Intercultural Bilingual Education and Indigenous Knowledge
Since early European colonization, ancestral Indigenous knowledge, languages, and other Indigenous forms of meaning construction have not been validated or legitimized by the Western academy or by its formal schooling systems (Battiste & Youngblood Henderson, 2000; Macedo, 1999; Smith, 1999). Despite the persistence of colonial and neocolonial ideologies that devalue and marginalize Indigenous knowledge as a lesser form of knowledge construction, Indigenous epistemologies have remained at the heart of the counter-hegemonic narratives of resistance enabling the survival of Indigenous people's cultural heritage (Cajete, 2008; Semali & Kincheloe, 1999).

The Mapuche people of Chile are no exception to this rule as historically, schooling for this population has been part of the modern nation-state's ideology based on Eurocentric, assimilationist, monocultural, and monolingual perspectives anchored in its Spanish and Catholic roots (Marimán & Bello, 1997). This has created abysmal gaps between the culture and language of schools serving Indigenous populations and the Indigenous knowledge and languages that already exist in the communities they serve (Díaz-Coliñir, personal interview, 2004).

Nevertheless, times are changing in Latin America as the Indigenous Emergence, a regional political movement that began in the early 1990s, has caused Indigenous people across the Americas to begin deconstruct-

ing Western paradigms and (re)constructing Indigenous ones. Nowadays, embedded in new forms of national and international dialogues, the movement proposes Indigenous self-determination and social justice (Bengoa, 2000; Stavenhagen, 1997). The Indigenous Emergence has placed Intercultural Bilingual Education (IBE) programs at the center of its educational agenda (Williamson & Pinkney-Pastrana, 2005).

Unfortunately, this movement has not had the same effect in all Latin American countries. In Chile and Argentina, for example, where the Mapuche people live, Indigenous populations are not a defining demographic factor and do not constitute more than 5% of the total population (Hernández, 2003; Instituto Nacional de Estadística de Chile [INE], 2002). As a result, the political situation of the Mapuche people in both Chile and Argentina is quite different from that of Indigenous populations in other places such as Bolivia or Guatemala, countries where high percentages of these populations are enabling the Indigenous movement to become an important political voice.

The body of scholarship in the English language and in the United States academy shows the benefits of incorporating Indigenous epistemologies in order to enable culturally relevant pedagogy (Castagno & Brayboy, 2008; Hornberger, 1996; McCarthy, 2005). The literature on the effectiveness of multicultural education for developing cross-cultural awareness and school performance for culturally and linguistically diverse populations in schools also supports this (Banks & Banks, 2003). But a similar body of research is not to be found in the Spanish-speaking academy and scholarship, especially focused on the IBE processes in the Mapuche context in Chile.

Only a limited number of Mapuche and non-Mapuche scholars are working on research on Indigenous education in Chile (Díaz-Coliñir, 1999; Donoso-Romo, 2008; Williamson & Pinkney-Pastrana, 2005). Consequently, not much has been published about Indigenous knowledge (Kimün) as applied to classroom instruction in IBE programs. My work also aims to contribute to this discussion.

In this study I focus on how a Kimche (a Mapuche traditional Indigenous sage) hired as a teacher in a primary school brings Kimün into that school's IBE program as his main curriculum. In doing so he creates culturally relevant pedagogical practices, which phrased as counter-hegemonic narratives of resistance to mainstream Chilean schooling, enable third spaces of negotiated epistemological categories of cultures-in-between (Bhabha, 1998), validating the Indigenous traditions of the local community.

I pay special attention to how this Kimche's critical instructional approaches validate through oral transmission the Indigenous knowledge, ritual practices, and language of the Mapuche communities in which the school is immersed. I describe how through resistance and agency, he

creates a space for dialogues of critical awareness among his students (Freire & Faúndez, 1989). I observe how these discussions in class validate Indigenous perspectives, which although historically silenced, constitute an important part of the earlier knowledge foundations, experiences, and cognitive resources that Indigenous students bring with them into the learning process in schools (Díaz-Coliñir, 1999).

Schools as primary agents for children's socialization have historically served the role of reproducing and legitimizing dominant knowledge as well as preferred values, languages, and power relations existing among larger categories of class, race, sex, ethnic, and linguistic hierarchies in social groups (Bourdieu & Passeron, 1990). In this poststructural framework, classroom knowledge construction as a specific form of cultural capital has never been neutral, but a contested ideological arena where certain cultures and languages force their dominance on subordinated ones, which are dismissed by exclusion through silence (Giroux & McLaren, 1996). This intellectual power struggle for cultural and linguistic dominance in classroom settings has been especially evident in the schooling of Indigenous people whose traditional knowledge and languages have been eliminated from schools as part of colonial conquest (Cajete, 2008; Marimán & Bello, 1997). From this perspective, the simple act of validating the existence of Indigenous knowledge in the classroom as a legitimate form of knowledge construction becomes an important act of epistemological resistance. It becomes a form of counter-hegemonic resistance (Giroux & McLaren, 1996) to the traditional Eurocentric epistemologies based on colonial and neocolonial patterns of instruction that have historically dominated formal schooling for Indigenous people. Validating Indigenous knowledge in the classroom also becomes an act of culturally relevant pedagogy (Ladson-Billings, 1995) as it recognizes the student's background and experiences as well as an act of decolonization as it affirms the central role of Indigenous perspectives in a learning process that has denied their existence for centuries (Macedo, 1999).

Research Methods: Six-Month School Ethnography

This study, conducted as a six-month school ethnography, uses a critical ethnographic research method (Foley, 2001; Kincheloe & McLaren, 2005) based on the researcher's critical reflections, participant observation, in-depth interviews, and informal conversations sustained over time in an IBE school program serving a Mapuche community in Chile. Although this article centers on the observation of one Kimche's instructional practices in the IBE classroom of the school, it draws important parts of its contextual data from a larger school ethnography in which formal and informal open-ended interviews (Fontana & Frey, 2005) were conducted between 2002 and 2008 with school administrators, teachers, parents, students, community members, government officials, and NGO members. It also includes contextual data drawn from archival sources in Chilean

universities, research centers, and from audiovisual support in the form of film, photography, and sound recordings that I used as secondary sources for gathering data during field work.

This classroom ethnography (Spindler, 2006; Zou & Trueba, 2002) was conducted in a rural school, Escuela Primaria de Piedra Alta (grades 1-8) with a 98% Mapuche student population. The school is located in the community of Piedra Alta in the *Area de Desarrollo Indígena (ADI) Lago Budi* near the coastal town of Puerto Saavedra on the Pacific Coast in the region of the Araucanía in southern Chile.

During my field work, I generated an extensive amount of field notes, still photography, and video- and tape-recordings amounting to approximately 50 hours of audiovisual material. For three months, I made classroom observations in the IBE program of the Piedra Alta school for four hours a week. I lived for four months in the house of a local Mapuche family whose five children had attended the school; the youngest was still there. During my field work, I conducted extended open-ended interviews and informal conversations with Kimche Sergio Painemilla, the main focus of this work, with whom I am still in contact. All formal interviews with Kimche Painemilla were conducted in Spanish, tape-recorded, and coded. The most relevant aspects amounted to 80 pages of transcription.

I looked for general statements emerging from the data, which would indicate relationships between categories, themes, metaphors, and patterns of cultural meanings (Wolcott, 2008). I focused on the interviews with Painemilla as narratives of events and his life-story accounts as forms of individual and collective social action. I saw the interviews with Painemilla as discourses with semiotic and cultural codes culturally positioned in his Indigenous Mapuche experience (Atkinson, Delamont, et al., 2005). I grounded the emerging patterns of discourse from these data in the theoretical framework that contextualized this study. For this I used a hermeneutic-dialectical process as described by Guba and Lincoln (1989) and Foley (2001). My analysis is hermeneutic because of its interpretative nature and dialectic in the sense of a Hegelian synthesis-formation of conceptual categories created in the back-and-forth movement between observations of concrete events and the subsequent abstract elaboration of them into conceptual categories anchored to the theoretical poststructural framework contextualizing this study.

I also used a narrative-inquiry lens for constructing meaning from the interviews as a form of social change that enables the voice of historically marginalized groups to construct texts of resistance to dominant meta-narratives, bringing forth alternative (re)constructions of identities, relationships, and communities (Chase, 2005). These represent the gathering of an oral tradition (re)constructing alternative ethnohistorical interpretations of social events (Menchaca, 1995; Vancina, 1985)

Issues of cultural production through resistance, identity, and historical reconstruction of events emerged continually as central themes in the collected narratives of Painemilla. These themes are all directly related to the theoretical framework that gives meaning to this research.

Being a mainstream middle-class Chilean by birth and not a Mapuche, I gave important consideration in my reflections to the politics of representation of the indigenous *Other* (Clifford & George, 1986). My reflections considered that although I have lived in the US long since and although I continue to be considered an insider in Chilean mainstream Spanish-Criollo culture, I am an outsider to the Indigenous Mapuche communities I observed. The wise statement of a Mapuche friend defines clearly my position in this study: "Although you are a Winka (outsider) different from the local ones, you still are a Winka." That is, although I might have a wider interest in the Mapuche culture, language, and people than that of many local Winkas, in many ways I am still constructing the Mapuche from an outsider's point of view.

Intercultural Bilingual Education in the Mapuche Context of Chile: Contested Idea?

The Mapuche are the largest Indigenous group in Chile, constituting 83.5% (604,349) of the total Indigenous population of the country. However, the Indigenous population represents only 4.7% of the total Chilean population (15,047,652, INE, 2002). The ancestral territory of the Mapuche extends across the Chilean border into Argentina. Estimates indicate a total Argentine Mapuche population of close to 300,000 (Hernández, 2003). These statistics put the total Mapuche population in both countries at almost one million.

According to the historic documentation on the Chilean "People of the Land" (Mapu=land, Che=people), four distinct cultural groups existed at the point of early Spanish colonial contact, although today only three remain: Pehuenches, Huilliches, and Lafkenches (Bengoa, 1998). Historically, the sociopolitical dynamics in the Mapuche have been complex, as these three cultural groups are subdivided into 3,000 rural, kinship-based communities, sometimes with highly differentiated political affiliations and intricate networks of relations among them. In addition, the Mapuche language (Mapudungun) has been transcribed with five alphabets, creating a linguistic map that includes seven dialectical regions (Bengoa).

Due to economic hardship in the rural Indigenous communities, a diaspora toward the cities has placed the Mapuche of Chile among the most urbanized Indigenous groups in the Americas. Close to 80% of this population has migrated to five main urban Chilean centers. Approximately 50% of the Mapuche people reside today in the capital city of Santiago (INE, 2002). The large cultural variation among the urbanized Mapuche groups, who also show great differences in levels of assimila-

tion, political ideologies, and religious affiliations, adds to the complexity of the internal dynamics of this ethnic group (Ortiz, 2009).

In terms of education, a large achievement gap remains between Mapuche students and mainstream, non-Indigenous Chilean students. At the national level, only 69.5% of Mapuche people under the age of 39 have attained an average of 8.5 years of formal schooling. This situation is also reflected in the school dropout rate among Mapuche students, of whom 30.4% never graduate and often leave school before grade 8 (Williamson & Pinkney-Pastrana, 2005).

From early colonial times, the Catholic Church in Chile used Indigenous languages and cultures as part of its transitional bilingual education projects for evangelizing the Mapuche (Marimán & Bello, 1997). After independence from Spain in 1810, an intense assimilationist schooling model aimed at "civilizing and modernizing" the Mapuche became part of the nationalistic project of the emerging Chilean nation-state for more than a century. Although later, during the early 1970s and mid-1980s, some isolated attempts at establishing other forms of IBE programs in Indigenous communities were made by universities, NGOs, international development agencies, and environmental groups, the earlier models of Indigenous schooling based on evangelization coming from the Church and assimilation coming from the State prevailed until 1996, when the Office of Intercultural Bilingual Education was created in the Ministry of Education. Its mandate was to incorporate Indigenous culture and languages into the educational process of the seven Indigenous groups in the country (Williamson, personal interview, 2004).

The implementation of IBE programs in Chile is new, and as of 2004, apart from short workshops on multicultural awareness, no IBE programs were to be found in public schools in Santiago, where 50% of the Mapuche population lives (Ortiz, 2009). Although IBE programs existed in rural areas of the Araucanía at that time, they were far from being a generalized educational practice. Today, although IBE programs in various Indigenous contexts have begun to emerge in Chile, the State and the Church remain the principal agents defining and implementing Indigenous educational policies, and numerous inequalities persist in the allocation of human and material resources for Indigenous schooling. This situation persists while the concept of IBE programs as sound educational practices remains a contested idea in many Indigenous communities.

Under a social-democratic government in Chile, IBE programs have now acquired a certain locus of legitimate existence. The current *laissez-faire* policy and indirect neutrality of the Chilean state about these programs opens ideological and implementational space for a strong Indigenous commitment and community support for this educational model, with the potential to make a great difference in its possible development and sustainability. Unfortunately, Mapuche community support

for IBE programs is not present at the needed levels (Painemilla, personal interview, 2004). This leads to the important question of how interested the Mapuche communities themselves are in developing IBE programs in schools for their children. There is no easy answer, and it soon becomes clear that among the grassroots of Mapuche rural and urban communities, there is no consensus about the effectiveness of and need for IBE programs in schools that serve Indigenous children. Although IBE programs are proposed with great vigor by some members of the urban Mapuche intellectual and political elite, they remain a contested idea among the grassroots populations of many rural Mapuche communities in the Araucanía. According to my observations, this issue lies at the heart of the challenges that current IBE program development faces in Chile today (Painemilla, personal interview, 2004; Ortiz, 2009).

Like many IBE projects in the Quechua- and Aymara-speaking Andean regions of Bolivia, Ecuador, and Peru—which also face opposition by segments in their Indigenous communities (Hornberger, 1988; King, 2000; López, 2008)—these programs in Chile are seen by many Indigenous parents as second-class educational settings because they are seen as not providing the mainstream skills in the dominant language that their children will need outside their Indigenous communities, from which they will have to migrate sooner rather than later due to a lack of economic opportunities (Díaz-Coliñir, personal interview, 2004; Painemilla, personal interview, 2004).

The issue of an unclear consensus among Indigenous communities about the value of IBE programs in Indigenous contexts is not a unique dynamic in the Mapuche context of Chile, but is a characteristic of many multilingual processes in schools worldwide. Hornberger (2000) and other scholars highlight these issues in many contexts and propose the Ecology of Language Metaphor as a way to think and talk about language planning, teaching, and learning in multilingual settings. This metaphor, based on three main points (language evolution, language environment, and language endangerment), is premised on a view of multilingualism as a resource that acknowledges language evolution in biliterate contexts; language environment in context at the individual, classroom, community, and societal levels; and the relationships of unequal power across languages for both studying and counteracting language endangerment.

Added to this, IBE programs in the Mapuche context also face the challenge of being part of a larger package of political demands by the Mapuche leadership. Thus any outcomes of negotiations on educational matters are dependent on far more complex issues such as land recovery and Indigenous political autonomy: issues that are unlikely to be resolved soon.

In Chile, as in other Latin American countries, an assimilationist/pluralist paradox (Hornberger, 2000) remains as tensions persist between

the current IBE models implemented by the state—aimed at creating a national citizenship based on assimilation—and the IBE programs proposed by the Indigenous leadership, who see these programs as educational opportunities for the multicultural and multilingual base that will bring about cultural and political Indigenous autonomy.

Piedra Alta School: School Culture, Identity, and Language

The school of Piedra Alta is located in the community of Conoco in the Area of Indigenous Development (ADI) of Lake Budi, 50 miles south of the Pacific coastal town of Puerto Saavedra in the region of the Araucanía in southern Chile. According to a 1999 socioeconomic report on the ADI-Budi (MIDEPLAN: Línea de Base), this area, which contains the highest Mapuche concentrations in the country, shows an estimated 85% of the Mapuche population under the age of 34 as being literate in Spanish with basic reading and writing skills. About 10% have never attended school, 63% have finished elementary school, 13% have gone to high school, and only 1.6% have attended college. The older segments of the population are far less schooled than the younger. The illiteracy rate reaches 20% among those between 35 and 59 years old and 45% in those over 60. This is in sharp contrast to the urban Mapuche groups, which having more access to schooling, present only a 6.1% illiteracy rate among those between 35 and 59 years old and less than 20% among those older than 60.

The Piedra Alta School is part of the network of schools in the region of the Araucanía owned by the Catholic Church and administered by its educational wing, the Fundación del Magisterio de la Araucanía (Educational Foundation of the Araucanía). It is an *escuela básica* (elementary school), with courses from grades 1-8. Schools in Indigenous communities in Chile do not go beyond grade 8, so Mapuche students going to high school (*educación media*) from grades 9-12 must migrate to an urban center (Ortiz, 2009).

The student population of the school at the time of my field work (2002-2004) was 99 children (49 boys and 50 girls), 98% of Mapuche origin. The school had five teachers including the principal, who had a double assignment as teacher and administrator, and four Kimches (traditional Mapuche teachers) including two men and two women, who served as instructors in the IBE program, but also as cultural advisors for the entire school. Kimches who sometimes team-taught with regular teachers during specific assignments conducted the IBE courses twice a week as workshop activities. However, IBE courses carried fewer credits than mainstream courses.

The school facilities consisted of a series of one-storey buildings, mainly of wood, built 20 years ago, yet they were in fairly good condition. Although there was no library, there were five classrooms, a teachers' lounge-meeting room, a computer lab with six computers with Internet access, a cafeteria, a playground with soccer and volleyball courts, a

garage with basic mechanical facilities for maintenance of a school bus, and the only public pay phone in the nine Indigenous communities in the Piedra Alta area served by the school.

All five teachers lived in faculty housing on the school grounds, and 2% of the non-Mapuche student population in the school comprised their children. At the time of my study, none of the teachers was of Mapuche origin, and they and their families were the only non-Mapuche, full-time residents in Piedra Alta.

The Piedra Alta School became well known during the late 1990s, when the National Office of Indigenous Affairs (CONADI) began to implement a series of pilot programs in Intercultural Bilingual Education in various areas of the Araucanía. Piedra Alta was chosen as an experimental site in the ADI-Budi, and it soon developed a reputation for its innovative pedagogical practices, including the hiring of Mapuche Kimches as instructors in its IBE program.

Mapuche children today live with the cultural effect of the assimilation of their ancestors over many generations. Under the strong influence of the dominant culture, they have come to embrace a Eurocentric view. The media and digital technology have opened these formerly isolated, rural Indigenous communities to global cultural and economic settings and have profoundly transformed their traditional ways of life.

Although it is controversial, many Chilean scholars, including Saavedra (2002), argue that Mapuche youngsters have almost completely lost their ancestral culture. According to Grebe (1998), urban Mapuche youngsters face even more intense pressure for assimilation, as cultural and linguistic loss is more pronounced in metropolitan centers where Mapuche culture and language is more stigmatized.

My perception is that the abysmal gap that existed between schools and Indigenous communities and their cultures and languages in the past has become today less dramatic as a shift toward intermediate positions has occurred on both sides. It is true that Indigenous youngsters are now more assimilated than in the past, which enables them to understand better the school culture, but schools have also become more flexible in accommodating cultural and linguistic diversity.

During my field work in Piedra Alta, the widely popularized image of the withdrawn "Silent Indian" (Foley, 1996) as part of the Indigenous cultural resistance in mainstream classroom settings was never evident to me. On the contrary, Mapuche students participated freely, were vocal, and seemed motivated in the school settings. I perceived a clear sense of the Indigenous students' entitlement and appropriation of the institutional spaces of the school that they attended and saw no resistance to school practices as a way of defining and protecting their Indigenous identity in a hostile environment.

Nevertheless, educational scholars such as Díaz-Coliñir (1999) argue that schools in the Mapuche rural communities remain defined as institutions upholding high levels of assimilation into the dominant mainstream Chilean culture, language, and values. As such, schools are the cause of disconnection from the culture and language of the communities they serve, thus creating what Gee (2007) refers to as “asynchronicity of discourses” or what Sarangapani (2003) and others define as a “discontinuity” between schools and Indigenous communities’ discourses.

Díaz-Coliñir (1999) mentions that this “discursive gap” between schools and Indigenous communities remains large and that Mapuche students are negatively affected by the mismatch between the pedagogical practices in schools and their community practices. This discontinuity and the asymmetric relations of power between cultures demeans the value of the Indigenous culture and language, producing a great negative effect on Mapuche children’s perceptions of reality, personality development, and identity creation. According to Hernández (2003), the negative value that mainstream Chilean and Argentine cultures prescribe to a stigmatized Indigenous group has a tremendous negative effect on the Mapuche children’s self-esteem, because, of course, they do not wish to be identified with an undesirable social group. Defensive mechanisms of “ethnic masquerading” and “identity shifts” arise and may even result in children denying their ethnic backgrounds and traditions. Clearly this has disturbing effects on the emotional well-being and intellectual development of Indigenous Mapuche children.

The linguistic ethnographic studies conducted in Piedra Alta and other areas of the ADI-Budi by Canuti and Pedone (2002) indicate that up to 60% of Mapuche children declared Mapudungun as their native language. However, this was not the case I encountered among the students of Piedra Alta. In my interviews with the students, no more than 20% claimed Mapudungun as their native language, and almost 80% reported having only a fair understanding of it. Most Mapuche students I interviewed defined themselves as native Spanish-speakers. Yet their sense of being Mapuche was quite strong, and their Indigenous identity came across as natural given the school’s location in an Indigenous community with 98% students of Mapuche origin. A group of students expressed their identity as follows.

We are Mapuche-Lafkenches, and we feel very happy about it because we have a different race and culture and we live in the country. But we also like the idea of being Chileans. We learned how to speak Spanish before Mapudungun, which is a very different situation than our grandparents who learned Mapudungun first and Spanish later. We consider ourselves Mapuche, but we also consider ourselves Chilean. [all translations are mine]

I did not see major conflicts or tensions between the students’ *Mapucheness* and their schooling processes even though their Mapudungun language skills were not strong. Code-switching from Spanish to Mapudungun and

vice versa were frequent in the IBE classrooms. Kimches created brief forms of dual-immersion language practices as they code-switched from one language to the other, sustaining long stretches of speech in each language. But the Mapudungun language was not taught officially in the school as an independent subject. Spanish was the dominant language of both instruction and spontaneous interactions among students in the classroom and school facilities. It was also the dominant language in many family and community settings with which I had contact (Ortiz, 2009).

Teaching the Mapudungun language as an independent subject had become a controversial issue in the community, so Kimches used it only as a support language to Spanish, which was the language most widely understood by the students. Kimche Painemilla informed me about the challenges that some previous Kimches had faced when refusing to speak Spanish in their classes with Mapuche students, most of whom did not understand Mapudungun.

One of the main problems that the older generation of Kimches had in school with the Mapuche children was that they refused to speak and deliver their classes in Spanish. It is very sad to say, but I quickly realized that if I spoke only in Mapudungun to my Mapuche students, I would lose their attention very soon, because they clearly did not understand what I was saying.

Although the Mapudungun language was present in the IBE program far more than in any other place in the school, it was used only as support to the Spanish language, which was dominant on school premises.

Kimches as Organic Intellectuals and Agents for Cultural and Linguistic Transmission in Schools

The presence of Kimches as transmitters of Indigenous knowledge in the classroom and the quiet but strong epistemological resistance that this action represents can be considered a revolutionary act of resistance aimed at reversing the direction of centuries-old colonial dominance of Western epistemological hegemonic constructs, which so far have defined what formal schooling for the Mapuche should be.

Although the Kimches’ traditional high status in Mapuche communities as scholars and teachers and holders of traditional Indigenous knowledge and language was considerable in the past, today school Kimches have a far less revered place in the community. In fact some Kimches are harshly criticized by the Mapuche segment that opposes IBE programs in schools (Painemilla, personal interview, 2004). But because they are also active and respected members of their communities, the Kimches’ role as intermediaries between schools and communities is important. Many students’ parents, especially the Mapuche mothers who watch their children’s schooling more closely, tend to maintain a closer relation with them. Thus Kimches in the IBE program also become links to the community by bringing local concerns and perspectives into the school (Painemilla, personal interview, 2004).

Kimches are considered organic intellectuals in the sense that Gramsci uses the term (Forgacs, 2000), that is, as local intellectuals emerging from the bottom-up of their communities and not as equivalents to the Mapuche intellectual elite, schooled in the Western academy and part of the Mapuche urban experience (Painemilla). My field experience indicates an important ideological difference between the Mapuche urbanized intellectual elite and the Mapuche rural organic intellectuals. As part of the social fabric of rural community environments, Kimches remain rooted to traditional Mapuche epistemology. They are actively involved in traditional religious-ceremonial practices and in traditional political roles in their Indigenous communities.

Placing Kimches in the schools of the ADI-Budi area has not been without opposition from sectors of the Mapuche rural communities that oppose IBE programs. The Piedra Alta school is an interesting case in point. Two of the current Kimches began the IBE pilot programs in that school more than a decade ago: Sergio Painemilla, a well-respected community Elder linked directly to the Painemilla lineage of community chiefs (Longkos) dominant in the Lof (nine communities) of Piedra Alta; and Roberto Millao, a Ngenpin (Master of Ceremonies of the main Mapuche ancestral ceremony, the Nguillatún). These two community members are widely respected in their Indigenous communities as they come from well-respected and dominant lineages in their communities. Yet as Kimches in the school, they have encountered opposition from some community members who argue that Kimches have no formal teacher training and that their knowledge in matters of the Winka (mainstream Chilean) world is not enough for them to be teaching their children in schools (Painemilla, personal interview, 2004).

Kimche Roberto Millao told me,

Although there is nothing personal against Kimches as members of the Mapuche communities, there is a natural lack of trust toward them as teachers in schools by some Mapuche parents. Some Kimches have definitely been viewed as unacceptable teachers by some in the community.

During a school meeting that I attended, a parent voiced her strong opinion in reference to a prospective Kimche:

He is not a teacher; he has no educational or pedagogical training. So why should he be teaching our children in school? We oppose him in our school as a teacher. We do not need the school to teach the Mapuche culture and language; we can do that at home. We want our children to be prepared for the Winka world.

Painemilla is more optimistic about this situation and argues that although there has been opposition toward Kimches teaching in schools, there is also a slow improvement of the situation. In his words,

At the beginning, many Mapuche parents thought that taking the Mapuche culture into the school was going to take us backwards, that Mapuche culture was not what people needed in schools, and that schools were places to learn Spanish and everything needed by

Mapuche children when they move to live into the cities. But now, there are larger numbers of parents who have become enthusiastic about the idea of the Kimches. Some Mapuche people used to say that the Mapudungun language was not worth it at all, that it had no use outside of the community; now they have another opinion about it. The teaching of Mapuche culture in the school has had an important impact, even among the parents of the children in school. We are slowly reversing a situation of opposition coming from some in the Mapuche communities toward IBE programs and Kimches as teachers in schools. We are moving toward one of more acceptance and support. Things are looking better every day.

During my interviews with Kimche Painemilla, he offered extensive portraits of his life from an early age when he had gone with his older sister into the housekeeping service of a wealthy family from Santiago, who had sent him to school and given him access to the educational resources of the household where he lived. He told me how despite the advantages he had been given in the city, he had to deal with an urban cultural environment that stigmatized and discriminated against his Indigenous background and experience. He had met his Mapuche wife in Santiago and formed a family by 1973 when the military dictatorship seized power through a violent coup d'état. A labor union activist in the industrial corridor of Santiago, he was forced into hiding by the political repression that struck the country, and he decided to move incognito back to his isolated and difficult-to-access ancestral Indigenous land in the Lake Budi area. There he had received a piece of land from his father and the protection and recognition of his Mapuche community as a man of learning.

Kimche Painemilla at Work: Dynamics of an IBE Classroom in Piedra Alta

At the beginning it is always very difficult, because students are in many ways very disconnected from their own Indigenous history and language. In a certain way, I have to entice them and make them understand that we are friends and we can have fun with the Mapudungun language, our past history, our traditions and knowledge as Mapuche people. I wish things would be different, but they are not. It does not happen by itself; among the young people today, there is a lot of deeply ingrained natural resistance to our own Indigenousness. Today one needs to convince the children of the importance of becoming Mapuche again. (Kimche Sergio Painemilla, 2003).

On my first contact with the Piedra Alta School, I did not observe much radically different, or distinctively Mapuche, from what I had seen before in classrooms with Indigenous or language-minority students in Guatemala, Peru, Mexico, Haiti, or the US—places I had visited or in which I had taught bilingual education for years. Initially, I found the school very similar to many poor rural schools in Latin America.

But my perceptions soon changed as I observed that Kimche Painemilla's learning objectives and sequence of instruction were based not on any *outside*-designed or mandated curriculum, but on the Mapuche calendar of ritual events celebrated by the communities in the Lake Budi area. They changed when I realized that this Kimche's main focus of

instruction was to look into the cosmology and the Indigenous knowledge (Kimün) embedded in community celebrations and that his instructional strategies were based on the diverse traditional oral transmission practices existing among Mapuche people. Amazed, I saw his instructional methodology as a dialectical movement, linking his ethnohistorical (re)constructions of past events with the current events in the community. He accomplished this by also weaving his own experiences as a community member into these events.

On introducing himself to the classroom, Paidemilla explained how he became a Kimche.

It was many years ago, when I had just returned from Santiago, that I was asked to deliver a eulogy in an Eluwün (funeral) of a respected and beloved member of the community. Mapuche Eluwüns have long discourses and sometimes become events that last for several days. They become a historical and personal reflection for the family and the community of the deceased. I gave a really heartfelt eulogy in Mapudungun, delivered in a Ngüttram format (dialogs from which children learn indirectly about events) of what I thought the deceased had contributed to his family and to our Mapuche community. When I finished, to my surprise I could see that people were very impressed with my delivery, and my words had deeply touched them to the heart—to a point where they even applauded my performance. This was something I did not expect at all as it is something very unusual in a solemn occasion such as a funeral. It is not customary for Mapuche people to applaud at a funeral, but there it was. They applauded, and this event really became a turning point for me in terms of my standing within the community. I was asked to become a Kimche when the time arrived.

The main learning objectives that defined Kimche Painemilla's curriculum were centered on predictable and fixed community events such as the Nguillatún (main thanksgiving celebration) taking place in December; the Mapuche New Year celebration (Wachipantu) in June; and the Mingaco and Kelluwün as cooperative work related to agricultural activities of planting, harvesting, and threshing. Other important community ceremonies, which did not have fixed dates such as the Machitúns (healing ceremonies) done by the Machis (shamans), the Palín (sport/ritual game similar to field hockey), the Mafüns (weddings), the Eluwüns (burials), the Rucan (communitary construction of houses), and other unexpected community events were incorporated into his IBE curriculum as they took place in the Lof (group of nine communities).

Referring in class to the Guillatún, the main thanksgiving ceremony to the main Mapuche deity Gnechen, Painemilla said to his students,

In the case of the Nguillatún, we see that there has been a big change between what the Spanish chroniclers such as Ercilla and others reported from a long time ago, to what we can find in the stories of Pascual Koña from the last century and what we live today here in the ADI-Budi. I remember my grandfather telling me something he saw as similar to what I saw when I was very young. But that is clearly not what we always see that exists today as the Nguillatún in many of our communities. Things have changed very much. But evidence that Indigenous knowledge still exists is that the Nguillatún still exists, because we believe in it. It is our main thanksgiving event to our ancestral gods.

Mapuche communities and people are linked through highly interconnected and extended kinship-based networks that transmit Mapuche historical memory and Indigenous knowledge and language, and, therefore, Mapuche identity construction relies heavily on them. Accordingly, Kimche Painemilla continually probed these family relationships during his classes as a form of constructing meaning. "Who were your grandfather and grandmother, and who were your great-grandfather and great-grandmother?" asked Kimche Painemilla, continually probing and asking his students to draw genealogical trees mapping their ancestral interconnections as branches of a Foye (cinnamon) tree, which is the main sacred ritual tree of the Mapuche. Students were guided to link the names and histories of their grandparents (*Folil-melche*=four roots) as the fundamental component of their Mapuche identity during the classroom (re)constructions of the local community events in the present and the larger Mapuche historical contexts of the past. Similar to what Gonzales, Moll, and Amanti (2005) call Funds of Knowledge as the source of students' previous knowledge, the Mapuche concepts of Tuwün as the maternal line of descent, Küpan as the paternal line, and Küpalme as the community line of descent (Quintriqueo & Quilaqueo, 2006) played an important role in the class conversations as Kimche Painemilla constructed knowledge and meaning of past events linked to the present as a form of culturally relevant pedagogy (Ladson-Billings, 1995).

The autobiographical work of Pascual Koña, *Memorias de un Cacique Mapuche (Memoirs of a Mapuche Chief, 1930)*—Koña was a resident of Piedra Alta and a distant relative of Kimche Painemilla—has been considered a key ethnographic document of the Mapuche-Lafkenche people of the Lake Budi area during the late 19th and early 20th century. This book, considered one of the most important Mapuche self-ethnographic accounts—certainly the only and most important one written by a Mapuche on the life of the Mapuche-Lafkenches in the Lake Budi area—was the second most important secondary source of curriculum material from which Painemilla constructed his classroom critical narratives such as the story of the trip to Argentina described by Koña in his memoirs. Painemilla told his students,

Longko (Chief) Pascual Painemilla, who was the organizer of the famous 1882 expedition to Buenos Aires in which Pascual Koña and a group of Mapuche leaders went to visit Argentina's President Roca to negotiate the release of Mapuche prisoners of war in that country, had a son named Pascual Segundo Painemilla, who created the current Lof (nine communities) of Piedra Alta in 1903 after the war of conquest waged by the Chilean army against the Mapuche, following the great Malón (uprising) of 1881. Pascual Segundo Painemilla had a son named Esteban, and Esteban had a son named Sergio, and that is obviously me. Therefore, I am a great-grandson of Pascual Painemilla, who was a close friend and relative of Pascual Koña, who with a Capuchin monk, wrote the famous book about his life. Many years ago, once I knew about the book of Koña, I began investigating his life, and I discovered that he had been born and raised here in the Lof of Piedra, at that time called Reuquenhue. We can read in Koña's introduction to his book: The old Mapuche

knew how to name the stars, the birds and all creatures that fly in the air. The animals that walked over the surface of the earth and the insects over the plants. They had a name, even for the rocks. I know very well the human beings that live in Reuquenhue and in other regions, because through traveling I have gone around half of the world. We will see how Kofia tells us about the stories of our Mapuche communities in his book written a long time ago, and we will try to compare them with how we see them today.

Painemilla also used some biographical materials of early colonial Spanish chroniclers of Mapuche life such as the *Cautiverio Feliz* of Nuñez de Pineda (1673) and *La Araucana* of Alonso de Ercilla y Zúñiga (1578), both clearly sympathetic to the Mapuche cause. Reinterpreting the meanings of the Spanish colonial texts through his oral narratives coming from his Mapuche-Lafkenche tradition, Kimche Painemilla continually portrayed the events depicted by these Spanish chronicles as counter-narratives to the official Chilean mainstream historiography. In this he was reinforcing Vancina's (1985) concept of oral tradition as an alternative form of historical (re)construction (Menchaca, 1995).

In relation to *Cautiverio Feliz*, he explained,

Students, you realize the image we Mapuche get from mainstream history books is that we as Indigenous people in the past were savage and violent people. But we must also realize that not all Spaniards and Europeans thought that to be the truth at that time. We must look into the story of Nuñez de Pineda, an upper-class Spanish soldier, who in his book *Cautiverio Feliz* tells his story after being captured in battle by a Mapuche Longko (chief) and held prisoner for many years. During this time, he was adopted by his captors, married the daughter of the Logko, and is said to have lived some of the best years of his life in a Mapuche community. We need to look at these stories of the past and compare them with what people think of us today.

Alongside the use of a few bibliographical colonial materials as written text, Painemilla was vocal about the need to maintain an oral tradition for knowledge transmission through the use of some of the nine varieties of Mapuche oral discursive practices (Relmuán, 2001). Kimches at Piedra Alta strongly resisted the idea of using a written curriculum and textbooks to organize their courses. Although they recognized the written word as part of the dominant literacy practices leading to social mobility and status acquisition in mainstream Western culture and the need for their students to master reading and writing skills, their IBE courses were deliberately organized and based on validating the oral Mapuche mode of knowledge construction and transmission. Consequently, reading and writing skills were not the main instructional focus. Although students took notes occasionally and Kimches frequently wrote on the board in both languages (Spanish and Mapudungun), most of the instruction was intentionally based on oral transmission of events in a storytelling format using Mapuche discursive formats such as *Pentukún* (greetings), *Ngülam* (advice), *Gnütram* (long stories and conversations with a pedagogical content), and *Epew* (short stories of wise and devious animal characters). Kimche Painemilla described his teaching methodology by saying,

In many ways, we like the idea that we have not been given much direction on how to teach our classes by the school authorities, because that would have brought us the Winka way of teaching, which is completely based on reading and writing and disregards the Mapuche oral tradition, which is so varied and rich. But on the other hand, we have also been forced to work with the written text, especially because of the demands of some Mapuche parents who have complained that we do not teach their children how to read and write in our classes as all teachers must. We have not completely discarded reading and writing from our classes, but it is certainly not the main mode of instruction that we propose.

In terms of student-teacher interactions, Painemilla himself was from the tightly interwoven community networks from which the children came. So in many ways he was directly related to some of the students. Therefore, the level of familiarity between him and the students, who in some cases also had his last name, created a strong bond and a highly protected learning environment, enabling easy, free-flowing interaction among the participants in class. A powerful relationship of trust and respect based on kinship was defined in classroom interactions between Kimche Painemilla and his students. He always addressed his students as *hijo* or *hija* (Spanish for "son" or "daughter"), and the students seemed to feel quite comfortable with this. Although some students did not always agree with all his stories and sometimes showed not much interest in them, I never saw a gesture of disrespect toward him. Kimches as organic intellectuals and ethnic, cultural, and linguistic insiders of the Indigenous communities in which they teach added important insights into the academic life and needs of their students. Painemilla's pedagogical style in the classroom flowed naturally in a synchronized, culturally relevant manner as the students had the same cultural codes and background knowledge as their teacher.

Nevertheless, there was also some subtle resistance among some of his students in relation to his perspectives. One of the strongest oppositional statements that I encountered was something like, "I think that to become very Mapuche today in 2004, as you propose, is to learn how to do a lot of crafts and wood carvings, and I really don't want to have anything to do with that in my life." This student's comment indicates that he was clearly not convinced by the proposed re-ethnification processes, as also many parents in the community were not. The methodologies that Painemilla used were in many ways linked directly to ancestral patterns of Mapuche pedagogy, highly constructivist, student-centered, and included dynamics that motivated students' inquiring minds and encouraged group participation through reflection, dialogue, and questions. These experiences created an active learning environment through direct field experiences in which groups of students would engage in projects of discovery of knowledge through data-collection in school and in the community. Activities were organized in cohorts of age and gender, as in Mapuche traditional educational and labor practices (Díaz-Coliñir, 1999; Ortiz, 2009). One stu-

dent described her experience in this type of learning environment very positively.

One of the projects that I really liked was to go and interview people of the communities on many issues of the past and the present. It was fun to talk with people and see what they thought about many things. That was at a time when we had a Mapuche principal in the school, and the community radio program transmitting from the school was growing strong. I began feeling very good about being a Mapuche during that time. Now we have a new principal who is not Mapuche, and the radio no longer transmits, but I still like Kimche Painemilla's classes.

For many in the Mapuche communities of the ADI-Budi, the lack of interest in learning the Mapudungun language and Mapuche traditions shown by many of the younger Indigenous youth in school was evidence of a generational breakdown in the transmission of the Indigenous culture and language, which according to Painemilla had become more evident in the last two decades. Some among the younger Mapuche generation saw this as a consequence of the older generation not taking the time or making the effort to teach them the Mapudungun language or their ancestral culture. Among the older generation, the complaint was that the youngsters had no interest in their Indigenous identity and traditional culture. It was also clear that the strong effect of the global media—through television, Internet, cell phones, and marketing devices targeting Indigenous communities—had created among Mapuche youngsters an important movement toward a current hybrid identity construction between their Indigenous, their Chilean, and their global identity, mirroring the popular culture in the media (Larain, 2004).

Conclusion

The following dramatic statement of Machi (Shaman) Carmen Curin (1995) on a broadcast television program is a revealing and powerful example of the complexity of the current challenges faced by Mapuche educators in trying to reverse the high levels of assimilation and cultural and linguistic loss among Mapuche youth.

Young people who have grown up lately have begun learning Spanish and have learned how to read. Their teachers taught them how to speak Spanish, so they have forgotten their own Mapuche language. I often think and I get sad because my work as a Machi is no longer understood by the young. The girls that have grown up do not dress as I do anymore; they dress like the Winka. I bring health to the sick. I call the father God and the mother Goddess to cure the ill, so they will be in good health on earth, so their children yet to be born will also be in good health. That is the matter that concerns me. Now the young people do not consider when prayers to the gods are needed, and secretly they mock these beliefs. Behind my back they are mocking me. They do not listen to my words; they despise my words; and they prefer the Spanish language they have learned with their teachers. That is what they have in their hearts and minds. (TVN, 1995)

Against this backdrop, the main contribution of this study is to highlight the potential pedagogical possibilities in a highly innovative IBE school program in a rural Mapuche context in the south of Chile. This

program began the unique, transformative, and innovative practice of hiring traditional Mapuche sages and educators (Kimches) as teachers in the school. As organic intellectuals, Kimches carry the Indigenous knowledge (Kimün) and language (Mapudungun) of their communities into the classroom as their main curricular objectives and instructional practices. These curricular objectives and practices, based on the Indigenous knowledge of the communities in which the school is immersed, validate powerful forms of cultural and linguistic counter-hegemonic resistance to the traditional Eurocentric modern knowledge construction prevalent in formal schooling. These counter-hegemonic, decolonizing, and culturally relevant pedagogical practices construct hybrid and negotiated third spaces in the classroom, which enable Indigenous students to reassess, (re)construct, and validate their ancestral knowledge and Indigenous identity.

By reinforcing the value of Indigenous knowledge and language as critical reflections, Kimche Painemilla decentered the dominant school's epistemological constructs and repositioned historically marginalized Indigenous perspectives at the center of the pedagogical process. The effect of (re)positioning Mapuche Indigenous knowledge and language at the center of the pedagogical event in an IBE school program, as Painemilla successfully did, also became an important starting point for revitalizing and recovering an Indigenous epistemology, a culture and a language that are moving dangerously fast toward extinction under the growing pressure for assimilation continually enforced by the Chilean nationalistic project and the neoliberal global market dominating the current economic scene in that country.

Implications for the Chilean state are the need to recognize the importance of IBE programs and to give them a status similar to that of other relevant subjects in the official curriculum. Concomitantly, they should also be assigned required funding. Implications for the Mapuche leadership are that IBE programs should acquire a larger degree of autonomy in the Mapuche political agenda, especially in relation to far more complex issues such as land recovery and political autonomy, complex points that will not be resolved soon. At the same time, the Mapuche intellectual and political leadership needs to address urgently and effectively the concerns and controversies that IBE programs generate in grassroots sectors of a number of Mapuche communities, because if IBE programs are to become successful and sustainable educational programs in schools, this will only happen if they have the support of their Indigenous communities.

Despite the many challenges IBE programs face today in Mapuche contexts in Chile, the situation is nevertheless far better than in the past, as a dialogue in search of possible solutions has begun.

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Animating Indigenous Knowledges in Science Education

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In this article, we explore how Indigenous knowledges can be used to inform science education and the development of school science curricula and pedagogy. Specifically, we explore how the concept of animating Indigenous knowledges (performing Indigenous identities, languages, and cultures and values) can be used for constructing pluralistic science classrooms. Finally, we present the notion of critical thinking in science education and discuss the issues surrounding criticality and possibilities for incorporating Indigenous epistemologies and ontologies into teaching and learning practices.

Introduction

We recognize that science as a school-based content area is an artificial construction that counters the holistic approach with which Indigenous peoples have developed understandings of the world. Therefore, this article attempts to move beyond the artificial margins of socially constructed science and outside the constraints of most academic writings in science, which discourage the use of the first person. Toward this effort, we weave reflections (in italics) of each of our own experiences with theory and others' writings. This structure illustrates important conversations that have taken place between us about teaching, doing research, and how our constructions of science have changed over time.

Janine: I am a Mi'gmaq from Listuguj and a PhD student at McGill's Faculty of Education. I speak Mi'gmaq, English, and French. My research interest in Indigenous knowledges, language revitalization, and science education stems from my postsecondary studies and employment experiences in health and science.

Gale: I am a white female who grew up in an urban environment in the United States and was a high school science teacher for 17 years. My work has mainly been with low-income, African-American youth who remain largely marginalized by school science.

We begin with a discussion of how the science education literature has responded to perceived differences between Western science and Indigenous science. We then discuss colonialism in school and in science education and describe some efforts that have been made by educators to decolonize education through the use of Indigenous languages, stories, and cultural values. Finally, we consider the need for more critical engage-