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Mapuche-Pewenche knowledge transmitted by teachers and parents: perception of schoolchildren in rural schools of the Araucanía region (Chile)

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ABSTRACT

In Chile, two public policies focusing on teaching-learning among primary school children have been implemented to contribute to the development of the language and culture of indigenous peoples and to the formation of intercultural citizens: 1) the Bilingual Intercultural Education Programme (PEIB); and 2) the Indigenous Language Sector (SLI). The present study assessed perception of Mapuche knowledge among schoolchildren in schools located in the Mapuche-Pewenche territory of the Araucanía Region. The methodology used for data collection was analytical-observational with a Likert-type questionnaire, applied to children in schools registered and not registered for these policies. The statements had two dimensions: the roles assumed in the transmission of knowledge by these public policies and by families respectively. The results showed that the children belonging to schools registered for these policies, expressed disagreement with most of the statements concerning the transmission of that knowledge; while the children in schools not registered for the policies considered that there was indeed transmission of knowledge. The latter result was related to the loss of valuation of this knowledge by these children. In both cases, the children recognised that knowledge is transmitted fundamentally within the family.

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Introduction

Indigenous knowledge comprises an accumulated body of experiences, values and beliefs transmitted by word of mouth from one generation to the next, constructed in direct relation with the territory through locally situated everyday practices (Gadgil, Berkes, and Folke 1993; Agrawal 1995; Berkes, Colding, and Folke 2000; Lauer and Aswani 2009; Orlove et al. 2010; Prober, O'Connor, and Walsh 2011). The flexible, empirical nature of indigenous knowledge allows the incorporation of ideas and skills from other knowledge systems, or practices taken from other social groups (Orlove et al. 2010). This explains why indigenous knowledge, articulated with scientific concepts, may be taken as a basis for developing scientific and technological skills in indigenous and non-indigenous pupils within formal education (Tinnaluck 2004; McGovern 2012). Furthermore, the incorporation of indigenous knowledge into educational plans and programmes promotes the revitalisation of language through the use of categories taken from the indigenous world, broadening the cultural horizons of pupils

from the dominant society (Wilder et al. 2016). In other words, indigenous knowledge is valid and can be included in education for serious, respectful use (Kimmerer 2002).

According to Quintriqueo and Cárdenas (2009), orally transmitted indigenous knowledge based on social memory is directly related with the natural world, family relationships within the community, and knowledge of the universe. In the case of the Mapuche people, the Mapuche knowledge that should be included in school teaching relates to a fourth ambit, a combination of epistemological elements which are vital for understanding the characteristics of this knowledge: nature, transcendence, orality, and spiritual forces (Quintriqueo and Cárdenas 2009). The direct relationship with the natural environment implies that all the elements of nature (trees, mountains, hillsides, estuaries, volcanoes) represent sources of knowledge that are used daily by the Mapuche. Transcendence refers to a body of knowledge that is learned through the teachings of grandparents and sages, and is considered significant in family life. Orality allows educational knowledge to be built, maintained, and taught to children and young people in the family context, based on dialogue and everyday conversations. Spiritual forces are related to the need to live according to the principles and changes observed in nature, and are assumed to be necessary for the development of human beings in the cultural, spiritual and supernatural dimensions (Quintriqueo and Torres 2012). This implies the challenge that teachers, whether Mapuche or not, and traditional Mapuche educators (sages) who collaborate in intercultural education programmes, must assume the existence of an indigenous *episteme* which is equally valid for studying and understanding social and cultural reality (Zambrana 2014). Weighting the importance of indigenous knowledge in educational spaces helps to foment respect and esteem for epistemological plurality, based on the social construction of knowledge in contexts of social and cultural diversity among groups which inter-relate in a given territory (Aikman 1999).

The recognition of indigenous knowledge, and with it demands for broader opportunities of access to a better quality education, have driven intercultural education policies, particularly in Latin American countries with large indigenous populations such as Bolivia, Colombia, Ecuador, Guatemala, México, Perú and Chile (Aikman 1999; Hornberger 2009). Interculturality, understood as a proposal for coexistence between groups and persons who share cultural knowledge and experience in a given country (Quilaqueo and Quintriqueo 2008), has focused more on the educational field. This embraces both the training of bilingual intercultural teachers and the introduction of Bilingual Intercultural Education Programmes in primary schools located in areas with a large indigenous population. However, despite these efforts, the relations sustained by many indigenous peoples with a range of political, economic and social institutions remain asymmetrical (Gundara 1997; Hornberger 2009).

In Chile, Bilingual Intercultural Education (EIB) was born with the aim of contextualising the Chilean school curriculum in the country's indigenous cultures and languages (Forno, Alvarez-Santullano, and Rivera 2009), in accordance with new international policies on indigenous peoples' rights (Hornberger 2009). This education policy started in 1996, with the development of pilot projects focused on 162 schools throughout the country, 78 of which have remained registered in the programme (Treviño et al. 2012). It was followed by a second stage which contemplated the formalisation of the Indigenous Language Sector (SLI) and focused on both orality and written communication; this came into effect in March 2010 on the legal basis of Decree N° 280 (2009) and the General Education Law of 2009 (LEGE). This law obliges all schools, in which more than 20% of the pupils are of indigenous descent to teach Indigenous Language, including the participation of a mentor teacher responsible for passing on pedagogical knowledge to the children; and a traditional educator belonging to the local community, responsible for teaching the indigenous culture and language (Treviño et al. 2012; Acuña 2012; Luna et al. 2014; Ibáñez 2015). The main objects of this educational model are to revalue and rescue indigenous cultures and to disseminate indigenous customs in the school environment through learning of the language, thus promoting knowledge and respect for diversity (Lagos 2015).

The PEIB is an advance in promoting bilingualism and the cultural rights of indigenous peoples (Luna et al. 2014). However its implementation still presents weaknesses, such as the lack of

traditional educators or trained teachers. This results from the low economic incentive offered to the traditional educators, the lack of commitment by school management in the municipalities (Loncón 2010) and the predominance of a monocultural curriculum which still reproduces asymmetrical, hegemonic relations (Quilaqueo, Quintriqueo, and Cárdenas 2005; Quintriqueo 2010; Lagos 2015; Mansilla et al. 2016; Turra 2016). Furthermore it does not adhere to the recommendations of the literature on education, which underline the importance of the link between schools and the communities and territories in which they are located (e.g. Williamson 2008; Quintriqueo and McGinity 2009; Quintriqueo 2010; Quilaqueo and Quintriqueo 2010; Forno, Alvarez-Santullano, and Rivera 2009; Álvarez-Santullano et al. 2011; Quintriqueo and Torres 2012; Quilaqueo et al. 2014). From a more critical point of view, it is argued that the community and the family would be the most propitious spaces for the recovery of the language – rather than the school, which would play a secondary role (Lagos 2015). The problems of this policy are therefore manifest, particularly on the local scale.

According to data from the Chilean Education Ministry (MINEDUC 2014), by 2014 there were 468 schools registered in the PEIB, mainly located in the south of the country where there were a total of 366 of these schools are located; 85.5% of these are rural schools in the Bío-Bío, Araucanía, Los Ríos and Los Lagos Regions. The indigenous pupils enrolled in these schools come from families and communities of the Mapuche ethnic group, the local indigenous people who are also the largest indigenous group in the country (84.11% of the indigenous population) and generally live in southern Chile (Ibáñez 2015). The Araucanía Region concentrates the largest number of schools in the PEIB which have included Indigenous Language in the school curriculum (46.5% of all PEIB schools in the country). In general, they are rural schools in which more than 20% of the pupils are Mapuche, and which achieve poor results in educational assessments (Ibáñez 2015; Peña-Cortés et al. 2017).

The case studies carried out in schools in the Bío-Bío, Araucanía and Los Ríos Regions have concentrated on analysing the role of the PEIB in cultural and linguistic revitalisation in the context of interculturality. Their principal findings stress: (1) the importance of educational and teaching resources contextualised for the transmission of intercultural contents (Luna et al. 2014); (2) the linguistic and intercultural competences of the traditional educator (Castillo et al. 2016) and the influence of the positive value placed by the traditional educator on the Mapuche language, Mapuzungun (Olate and Henríquez 2010; Almendra, Peña-Cortés, and Rojas 2011); (3) the role of the family and the Mapuche community in the school to ensure the cultural appropriateness of the educational programme (Ibáñez 2015) and of the transmission of oral accounts referring to the territory (Rojas-Maturana and Peña-Cortés 2015); (4) the absence of Mapuzungun teaching strategies used by the teachers and traditional educators of Mapuche society (Williamson 2008; Quidel 2011); (5) the subordination of Mapuche contents to the official contents of the PEIB, which depend on the will of the teacher and/or the school's Christian values (Forno, Alvarez-Santullano, and Rivera 2009; Álvarez-Santullano et al. 2011); (6) the difficulty which Mapuche pupils experience in recognising geographical and environmental components from the Mapuche context (Almendra, Peña-Cortés, and Rojas 2011); (7) the importance of the professional teaching identity of PEIB teachers (Quilaqueo, Quintriqueo, and Riquelme 2016); and finally (8) the differences in the level of Mapuzungun of pupils belonging to Mapuche-Lafkenche groups from around Tirúa (on the coast) and Mapuche-Pewenche communities of the Alto Bío-Bío (in the Andes mountain range) (Henríquez 2014).

Most of the studies described have focused geographically on spaces where natural resources have been degraded by changes in land use (e.g. expansion of forestry plantations) (Miranda et al. 2015; Pincheira-Ulbrich et al. 2016). This is a less important factor in the Mapuche-Pewenche territory of the Araucanía Region, a mountainous environment bordering large, state-protected wild areas where natural components are better preserved. The Mapuche-Pewenche territory has therefore received less attention, and presents an opportunity for identifying the presence and transmission of indigenous knowledge from the perspective of children in schools registered and not registered for PEIB and SLI. To explore this issue, the aim of the present article was to investigate Mapuche and non-

Mapuche pupils' perceptions about: (1) the teaching provided by teachers and traditional educators, and (2) the role of the family in the transmission of geographical knowledge. We make a distinction between the two kinds of school since differences are to be expected in how bilingual intercultural education is perceived by the children. Likewise, given that the natural environment is in a better state of conservation, we may expect to find better results in the transmission of indigenous knowledge than in the previous studies which emphasised the weakness of the PEIB (Lagos 2015). We consider it to be fundamental that the pupils recognise the presence of contents taken from the Mapuche culture in the school curriculum in agreement with the objectives of national and international intercultural education and indigenous policies (Aikman 1999; Forno, Alvarez-Santullano, and Rivera 2009).

Materials and method

Study area

The study area was part of the Mapuche-Pewenche territory located in south-central Chile in the foothills of the Andes, a rural zone in the strip running along Chile's border with Argentina. The area lies between 37°57' and 39°39' South and 70°46' and 72°23' West, covering an area of 12,044.3 km² and comprising the territories of seven municipal districts in the Araucanía Region: Lonquimay, Cunco, Melipeuco, Curacautín, Curarrehue, Villarica and Pucón. The relief is mountainous with big volcanoes (González-Ferrán 1995), lake environments and large areas of native forest. Parts of this terrain are included in wild areas protected by the Chilean State (IGM 1985). The area contains settlements of Mapuche communities, with 201 indigenous 'reductions'¹. Of these 120 are in the district of Villarrica, followed in descending order of importance by Melipeuco, Curarrehue, Pucón and Lonquimay. In terms of land area, 23.4% of the district of Villarrica is occupied by Mapuche communities, followed by Lonquimay with 18.1%; the last is Curacautín, with only 0.17%. The territory contains around 221 public and private schools, representing 17.2% of the total in the region; only 12.8% of these are registered for PEIB (21 schools). According to data provided by MINEDUC (2014), the district of Curarrehue has the largest number of schools² registered for PEIB ($n = 9$; 4.12%), followed by Lonquimay ($n = 5$; 2.29%), Cunco and Villarrica ($n = 4$; 1.83%), Melipeuco ($n = 3$; 1.37%) and Pucón ($n = 1$; 0.45%).

School selection

The schools were selected following an intentional, non-probabilistic sampling strategy (Bisquerra 2004). This was governed by three inclusion criteria: (1) Municipal or private schools with single and/or multigrade courses, which present enrolment of students with Mapuche and non-Mapuche ancestry between 3rd and 8th grade (between 8 and 13 years old); (2) Schools located in rural or semi-rural communities; and (3) Schools located within a radius of 3 kilometres from large natural spaces, such as araucaria forests (*Araucaria araucana*), wetlands and bodies of water (Table 1). The latter criterion reflects the interest in selecting schools which would favour interaction between

Table 1. Schools surveyed.

Name of School	Municipality	PEIB	SLI
Marimenuco Primary school	Lonquimay	Not focused	Does not teach Mapunzugun
Vida y Paz School	Cunco	Focused	Teaches Mapunzugun
Quecherehue Primary school	Cunco	Focused	Teaches Mapunzugun
Cumcumllaque Primary school	Melipeuco	Not focused	Does not teach Mapunzugun
Mon. Francisco Valdés Subercaseux lyceum	Curarrehue	Focused	Teaches Mapunzugun
Maitte Private school	Curarrehue	Not focused	Does not teach Mapunzugun

Source: own preparation based on data from MINEDUC (2014). PEIB = Bilingual Intercultural Education Programme, SLI = Indigenous Language Sector.

pupils and important elements of the immediate environment, in the hope that this interaction might be reflected in their knowledge of nature. There were also two exclusion criteria: (1) Municipal and direct grant private schools which do not have pupils enrolled who are of Mapuche descent and (2) Schools in urban centres. Six schools were finally selected which matched the criteria (Figure 1). Of these, three were registered in the Bilingual Intercultural Education Programme (PEIB) and taught Indigenous Language (SLI), while three were not registered for these public policies (Table 2). The questionnaire was applied to 327 pupils between 3rd and 8th grade primary, distributed as follows: 21.7% 3rd grade, 16.2% 4th grade, 12.5% fifth grade, 14.4% sixth grade, 17.4% seventh grade and 17.7% eighth grade. In terms of ethnic origin, 67.6% of the pupils were Mapuche (all the Mapuche children belonged to a community³) and 32.2% were non-Mapuche. Boys made up 49.8% of the sample and girls 50.2%. Finally, the children were divided into six analysis categories as follows: (I) all the children ($n = 327$); (II) children at schools registered for PEIB and SLI ($n = 215$); (III) Mapuche children at schools registered for PEIB and SLI ($n = 127$); (IV) non-Mapuche children at schools registered for PEIB and SLI ($n = 88$); (V) children at schools not registered for PEIB and SLI ($n = 77$) and (VI) Mapuche children at schools not registered for PEIB and SLI ($n = 68$). Non-Mapuche children at schools not registered for PEIB were not evaluated because there were only nine children in this category.

The instrument

The data collection instrument selected was a Likert-type questionnaire. It contains a set of pre-established statements, related with the study object, presenting possibilities of orderable answers with

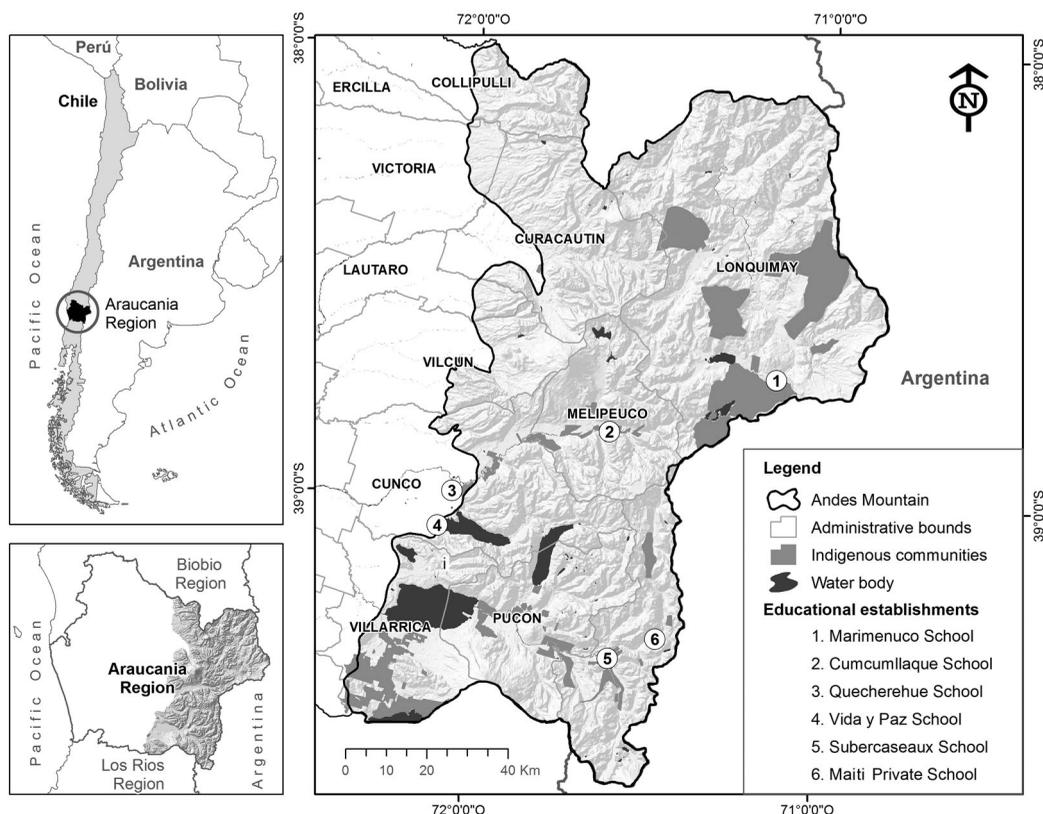


Figure 1. Distribution of selected schools in the Mapuche-Pewenche territory.

Table 2. Statements contained in the Likert-type questionnaire.

Code	Statement
1	The teachers value and make use of the knowledge that I have about animals, insects and nature
2	When the teacher teaches the classes, he/she incorporates Mapuche customs to give examples of school learning
3	The teachers in my school talk and teach the Mapuzungun language in class
4	When teaching the Natural Sciences or History, Geography and the Social Sciences, the teachers give examples using Mapuche knowledge
5	In the school they invite old men or <i>kimches</i> – sages – to teach us the history of the Mapuche community or families
6	I know the geography of my community and the names in Mapuzugun (for example hills, wetlands, volcanoes, marshes or mountains)
7	My parents or grandparents teach me about the history of my family (for example, if there have been longkos [chiefs] or machis [spiritual leaders], how we arrived here and who is related to me)
8	My parents teach me about the characteristics of the territory (geography) where we live, for example if there are <i>majiñ</i> [marshy grazing land], <i>menokos</i> [sacred sites], volcanoes or araucarias and their importance
9	The teachers teach more Mapuche knowledge than western knowledge (school books) in school
10	I know why this sector is considered Lafkenche or Pewenche

autonomous or independent meanings (Quintriqueo et al. 2011). This questionnaire included 10 statements which may relate both to the role of the teacher in the contextualisation of educational strategies and to the transmission of Mapuche knowledge, as well as the role of the family in the transmission of geographical knowledge (Table 2). There were three possible answers to the statements: Disagree, Indifferent and Agree. The Indifferent category implies that the child did not know or did not respond.

Data analysis

Statistical analysis of the reply categories (disagree, indifferent and agree) was carried out with a chi-squared goodness of fit test (X^2) and Bonferroni confidence intervals (*a posteriori* test) (Siegel and Castellan 1988). This allowed the replies to be compared between the three categories, with random expected frequencies having a statistical significance of 5% ($p \leq 0.05$). Thus if the X^2 test produced statistically significant results we can say that at least one reply category was selected. To determine the category(ies) differentiated from the random expected frequency (i.e. 33.3% in each category), the Bonferroni confidence intervals were calculated: if the replies fall within these limits, the differences between the expected and observed proportion are only random occurrences. But if the observed proportion is higher or lower than the upper or lower limit respectively, the replies are significantly selected for or against. All these analyses were done with the ABUSE programme (Neu, Byers, and Peek 1974).

Results

The questionnaire, applied to 327 children in rural schools located in the study area, showed that – whether or not they participated in the PEIB and SLI programmes, or considered themselves to be Mapuche or non-Mapuche, (Table 3) – the majority of pupils were not indifferent to the statements presented to them, with significant expression of agreement or disagreement with the questions. This means that the pupils' answers do not appear to be random; moreover certain response patterns were associated consistently with the different groups of children.

Analysis of the general response patterns of the six study categories separately (all the children, children at schools registered for PEIB and SLI, Mapuche children at schools registered for PEIB and SLI, non-Mapuche children at schools registered for PEIB and SLI, children at schools not registered for PEIB and SLI and Mapuche children at schools not registered for PEIB and SLI) showed that the group 'all the children' agreed significantly with 6 of the 10 statements, while there were similar figures for agree and disagree in replies to 3 of the statements (Statements 2, 3 and 4 in Table 3). This implies that there were two groups of opposed opinions for these statements.

Table 3. Analysis of the survey on the perception of intercultural education applied in six Mapuche-Pewenche schools in the Araucanía Region.

Target population	Question	Disagree (%)	Indifferent (%)	Agree (%)	Expected proportion (%)
All the children (n = 327)	1	15*	14*	71*	33.3
	2	41*	14*	45*	33.3
	3	42*	19*	39*	33.3
	4	42*	16*	42*	33.3
	5	39ns	15*	47*	33.3
	6	37ns	20*	43*	33.3
	7	25*	10*	65*	33.3
	8	23*	18*	59	33.3
	9	50*	18*	32ns	33.3
	10	35ns	20*	45*	33.3
Children in schools registered for PEIB and SLI (n = 215)	1	15*	18*	67*	33.3
	2	51*	13*	36ns	33.3
	3	50*	19*	31ns	33.3
	4	51*	15*	34ns	33.3
	5	40ns	13*	47*	33.3
	6	47*	15*	38ns	33.3
	7	34ns	11*	55*	33.3
	8	27ns	19*	54*	33.3
	9	58*	13*	29ns	33.3
	10	42*	19*	39ns	33.3
Mapuche children in schools registered for PEIB and SLI (n = 127)	1	17*	17*	67*	33.3
	2	44*	12*	44*	33.3
	3	46*	20*	33ns	33.3
	4	47*	16*	37ns	33.3
	5	37ns	14*	49*	33.3
	6	39ns	16*	46*	33.3
	7	18*	13*	69*	33.3
	8	27ns	15*	58*	33.3
	9	54*	14*	31ns	33.3
	10	39ns	20*	42ns	33.3
Non-Mapuche children in schools registered for PEIB and SLI (n = 88)	1	13*	19*	68*	33.3
	2	60*	15*	25ns	33.3
	3	56*	17*	27ns	33.3
	4	56*	15*	30ns	33.3
	5	44ns	13*	43ns	33.3
	6	58*	15*	27ns	33.3
	7	57*	8*	35ns	33.3
	8	28ns	24ns	48*	33.3
	9	63*	13*	25ns	33.3
	10	47*	18*	35ns	33.3
Children at schools not registered for PEIB and SLI (n = 77)	1	5*	9*	86*	33.3
	2	10*	8*	82*	33.3
	3	32ns	34ns	34ns	33.3
	4	4*	9*	87*	33.3
	5	8*	8*	84*	33.3
	6	19*	17*	64*	33.3
	7	27ns	38ns	35ns	33.3
	8	17*	18*	65*	33.3
	9	21ns	38ns	42ns	33.3
	10	22ns	18*	60*	33.3
Mapuche children at schools not registered for PEIB and SLI (n = 68)	1	4*	10*	85*	33.3
	2	7*	9*	84*	33.3
	3	31ns	34ns	35ns	33.3
	4	4*	9*	87*	33.3
	5	6*	7*	87*	33.3
	6	21*	16*	63*	33.3

(Continued)

Table 3. Continued.

Target population	Question	Disagree (%)	Indifferent (%)	Agree (%)	Expected proportion (%)
	7	28ns	35ns	37ns	33.3
	8	19*	16*	65*	33.3
	9	24ns	34ns	43ns	33.3
	10	24ns	18*	59*	33.3

Note: Expected proportion = percentage of children giving an answer of indifferent (null hypothesis), * = response significantly higher or lower than expected proportion ($p \leq 0.05$), as appropriate, according to the χ^2 test and the Bonferroni confidence limits, ns = not significant.

To clarify this dichotomy, the division of the sample into children at schools registered and not registered for intercultural education programmes showed that ‘children at schools registered for PEIB and SLI’ disagreed significantly with the majority of the statements, in contrast to ‘children at schools not registered’ for these policies (essentially all Mapuche children [88%]) who tended in general to agree with most of the statements (on average, more than 62%). Note that in this latter group opinions are divided and there were no conclusive results for the statements: ‘The teachers in my school talk and teach the Mapuzungun language in class’ (Statement 3), ‘My parents or grandparents teach me about the history of my family (for example, if there have been longkos or machis, how we arrived here and who is related to me)’ (Statement 7) and ‘The teachers teach more Mapuche knowledge than western knowledge (school books) in school’ (Statement 9). These results show that a large proportion (on average more than 50%) of children registered for these policies consider that the curriculum lacks several elements of Mapuche knowledge; on the other hand, Mapuche children at schools not registered for the policies appear not to be aware of these elements.

To examine this response pattern in more depth, the reactions to the statements by Mapuche and non-Mapuche children registered for these policies were compared, and the results between the two groups were found to be similar (i.e. disagreement with most statements). For example, there is clear disagreement with ‘The teachers teach more Mapuche knowledge than western knowledge (school books) in school’ (58%, Statement 9). Most of the Mapuche children also disagreed with the statements ‘The teachers in my school talk and teach the Mapuzungun language in class’ (46%, Statement 3), and ‘When teaching the Natural Sciences or History, Geography and the Social Sciences, the teachers give examples using Mapuche knowledge’ (47%, Statement 4). It is interesting to note that about 18% of this children do not know (or do not notice) whether these components are taught in school. In this context Mapuche knowledge seems to be transmitted significantly by the *kimches* (sages) (Statement 5).

The greatest difference between Mapuche and non-Mapuche children registered for these policies was found in the replies to the statements: ‘I know the geography of my community and the names in Mapuzugun (for example hills, wetlands, volcanoes, marshes or mountains)’ (Statement 6) and ‘My parents or grandparents teach me about the history of my family’ (Statement 7), which were generally recognised by Mapuche children with 46% and 69% agreement respectively (Table 3). This result is partly explained by the fact that the non-Mapuche children did not belong to an indigenous community; however, the effect of the family does not seem to be consistent (Statement 7) in Mapuche children not registered for of these policies, among whom the three response categories are similarly distributed – in this case for example, 35% of these children do not know (or do not notice) if these components are taught in school.

Individual analysis of the replies showed that most children in all groups agreed with the statements ‘Teachers value and make use of the knowledge that I possess about animals, insects and nature’ (Statement 1, more than 70%) and ‘My parents teach me about the characteristics of the territory (geography) where we live, for example if there are *majiñ*, *menokos*, volcanoes or araucarias and their importance’ (Statement 8, more than 50%). By contrast, one of the questions where there was most general disagreement was ‘The teachers teach more Mapuche knowledge than western knowledge (school books) in school’ (Statement 9, 54%), although this result was not conclusive for children not registered for the policies.

To summarise, the results show that the children (in all groups studied) feel that their knowledge is valued by the teachers, however this knowledge is being transmitted in class by the *kimches* (sages) and mainly within families. The survey also showed that children at schools where the policies are applied consider that the curriculum lacks several elements of Mapuche knowledge. On the other hand, some of the Mapuche children group at schools registered for the policies, and more especially children at schools not registered, do not appear to distinguish elements of their own ancestral history, suggesting that they do not value this knowledge (Statement 7).

Discussion

The perception of primary school children of the Mapuche-Pewenche knowledge transmitted to them by their parents and teachers was evaluated in schools registered and not registered in the PEIB and SLI in the Araucanía Region. According to the questionnaire, most of the pupils belonging to schools registered for these policies perceived that the curriculum lacks several elements of Mapuche knowledge that are not being provided by traditional educators; this was especially true of Mapuche children at these schools (e.g. Espinoza 2016). Although teachers value the pupils' Mapuche knowledge and use it in class, it is in fact mostly transmitted by the *kimches* (sages). Outside school, the role of the family is consistent (e.g. Ibáñez 2015); however, it should be noted that an important proportion (around 23%) of the children do not perceive transmission of knowledge within their families.

The results show that Mapuzungun is not spoken to a significant degree in the classroom. Although it may be thought that the effective implementation of the bilingual intercultural education policy might strengthen indigenous language learning (SLI) to help Mapuche and non-Mapuche pupils to assimilate Mapuche sociocultural contents, it does not by itself ensure integrated learning (Quintriqueo and Torres 2012; Luna et al. 2014; Quilaqueo, Quintriqueo, and Cárdenas 2005; Quintriqueo 2010; Lagos 2015; Mansilla et al. 2016; Turra 2016).

Another problem which was revealed by this study is that in subjects like Natural Sciences, History, Geography and Social Sciences, knowledge transmission is precarious or inadequate, and children and adolescents are not being educated to live and work in intercultural and interethnic contexts (Quilaqueo, Quintriqueo, and Cárdenas 2005; Quintriqueo 2010; Lagos 2015; Mansilla et al. 2016; Espinoza 2016; Turra 2016). Therefore the children currently face a challenge in maintaining their culture and knowledge of their territory (e.g. Almendra, Peña-Cortés, and Rojas 2011), in a framework which seems to depend for its effectiveness on the voluntary commitment of the teacher and even the Christian values of the school (Forno, Alvarez-Santullano, and Rivera 2009; Álvarez-Santullano et al. 2011).

These findings demonstrate the predominance of a monocultural curriculum over Mapuche knowledge, as expressed by the pupils in the survey (see Quilaqueo, Quintriqueo, and Cárdenas 2005; Quintriqueo 2010; Lagos 2015; Mansilla et al. 2016; Turra 2016). This situation is accentuated by the epistemological tension which results from integrating Mapuche cultural knowledge into the standard school curriculum (Quintriqueo and Torres 2012), as occurs with teachers of Intercultural Primary Education (Quilaqueo, Quintriqueo, and Riquelme 2016). This asymmetry in relations with the indigenous world has been described as a global problem (Gundara 1997; Aikman 1999; Hornberger 2009; Wilder et al. 2016), and is clearly shown by the pupils in this study. The pupils' opinions emphasise that the PEIB still needs to be improved to achieve effective teaching and learning which are pertinent to the context of these schools. Furthermore, the results are consistent with the existing literature, which reports the limitations of the PEIB (Riedemann 2008; Forno, Alvarez-Santullano, and Rivera 2009; Quintriqueo et al. 2011; Loncón 2010; Ibáñez 2015). For example, among the main criticisms highlighted by Espinoza (2016), are 'their essentialist and static view of the concept of culture' and 'their focus on indigenous students, ignoring the fact that intercultural education is also necessary for the majority of society'.

The underlying reasons for the delay in implementing these policies can be attributed to: (i) a level of indirect racism by which a non-indigenous society would enjoy supremacy or certain privileges over the indigenous culture, with the result that teachers and students in these contexts would normalise Western values (e.g. Quintriqueo 2010; Lagos 2015; Mansilla et al. 2016; Turra 2016; Webb and Radcliffe 2016); (ii) the limited availability of intercultural professionals with adequate training combined with low-income schools, resulting in a shortage of adequately qualified staff (Williamson 2008; Quidel 2011; Webb and Radcliffe 2015); and (iii) the scarce application of mechanisms to encourage parental participation in school decision-making, encouraging a top-down policy (Ibáñez 2015; Espinoza 2016) and perpetuating social differentiation between the two groups (Webb and Radcliffe 2015).

Pupils in schools not registered for PEIB and SLI, on the other hand, expressed strong agreement with most of the statements, indicating that they perceive that there is a significant transfer of traditional knowledge by the educators. We think that this may be attributable to the low level of knowledge of their own culture, which does not allow them to recognize the gap between what they are expected to know and the few elements with local relevance imparted by the teacher. In this way, the results would come precisely from the absence of a programme to incorporate Mapuche knowledge. Thus, these few elements imparted by teachers would be an indicator that indigenous knowledge is being transmitted and the children are less critical in assessing the presence of this knowledge in the school. In fact, the pupils were not clearly aware whether 'The teachers talk and teach the Mapuzungun language in class', and whether they were taught more western or Mapuche knowledge. Furthermore, there were no conclusive results for the statement 'My parents or grandparents teach me about the history of my family', implying that they do not appear to distinguish elements of their own culture. This can be attributed in part to the predominance of Western values, which becomes stronger in this group not subject to the PEIB and SLI (Webb and Radcliffe 2015, 2016). Here it may be important to evaluate the context, i.e. the characteristics of the family and the community from which they come (Espinoza 2016).

The study revealed the importance of the family in the teaching of Mapuche knowledge transmitted in the home, especially for the group of students assigned to PEIB and SLI (Quilaqueo, Quintriqueo, and San Martín 2011; Quilaqueo 2012; Ibáñez 2015; Rojas-Maturana and Peña-Cortés 2015). This confirms that Mapuche parents have a decisive influence on the teaching of local knowledge and the history of the children's territory. However, part of this knowledge is not being transmitted or is not being perceived by children, especially children not subject to the policies. Considering that all the children come from indigenous communities, this aspect needs to be investigated in order to diminish this potential loss of knowledge. Consequently, when the two sub-groups of pupils (registered and not registered for PEIB and SLI) are compared, the most notable effect of PEIB and SLI in pupils registered for the programmes is the ability to visualise the lack of several elements of Mapuche knowledge, which shows a marginal contribution to Mapuche-Pewenche education (e.g. Webb and Radcliffe 2016; Lagos 2015; Espinoza 2016).

Finally, our findings show that these public policies should be strengthened substantially in view of the need for teaching-learning across all school subjects. At the least, this process should ensure that: (i) the State designs mechanisms to ensure that certain minimum contents are taught effectively by the teachers; (ii) periodic evaluations of these public policies are established; (iii) the participation of the community and the family in the teaching of children is strengthened; (iv) the curriculum contents are taught contextualised to the local reality; (v) true integration is promoted between non-Mapuche and Mapuche children.

Conclusion

The results of the research allow us to conclude that children at schools where the PEIB and SLI are applied consider that the curriculum lacks several elements of Mapuche knowledge. This indigenous knowledge is being transmitted in class by the *kimches* (sages) and mainly within families. In this

sense, the role of the community and the family must be strengthened by public policies. On the other hand, part of the group of Mapuche children to whom these policies are applied do not appear to distinguish elements of their own ancestral history; this lack of knowledge appears to be more marked in the children to whom the policies are not applied, which may be related to the loss of valuation of this knowledge. We suggest that these policies may indeed be contributing to indigenous knowledge, but that their contribution is far removed from what one might expect of a successful policy. These findings demonstrate the predominance of a monocultural curriculum over Mapuche knowledge and are consistent with the existing literature, which reports the limitations of the PEIB.

Geolocation information

The area lies between 37°57' and 39°39' South and 70°46' and 72°23' West, and is part of the Mapuche-Pewenche territory.

Notes

1. Area of land in common legal holding in which a certain number of people live (generally a tribal or family group). The legal assignment of the land is evidenced by a deed called "Título de Merced" originally issued to the head of the group under a system instituted in 1883.
2. Official data of MINEDUC Study Centre 2014 <http://centroestudios.mineduc.cl/index.php?t=96&i=2&cc=2519&tm=2>
3. A 'community' is a space formed by one or more reductions; in the first case the borders of the community are the same as those of reduction, in the second case the borders of the community coincide with the external borders of all the reductions that form it.

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