Analysis of School Educational Spaces: A Challenge for Spatial Relevance in Contexts of Sociocultural Diversity

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ABSTRACT: This research addresses the problem of the imposition of educational spaces in multicultural contexts. The research is of qualitative nature, based on an interpretative hermeneutic paradigm. It uses collective case study design. The selection of participants was non-probabilistic and intentional, and snowball sampling was used, selecting 15 teachers and 24 students. It is concluded that Chilean schools in multicultural contexts show a lack of social and cultural relevance in the construction and organization of spaces. In addition, it is concluded that educational establishments should consider the implementation of pedagogical and didactic strategies in contact with nature, given that, as has already been demonstrated, children often prefer outdoor experiences as ideal spaces for learning.

KEYWORDS: Intercultural education, multiculturalism, Indigenous education, ethnocentrism, acculturation

This research addresses the problem of the Western imposition of school spaces in Mapuche contexts in Chile. This problem is analyzed from the contextual theory of Hall (1966), who states that space involves more than the tangible or physical, but is a matter of human perception that also influences intercultural dialogue. According to the theory on the social construction of reality by Berger and Luckmann (1968), reality is constructed through belonging to a context; and considering Rawls' (1971) theory of social justice as a basis, spatial justice arises, which proposes to understand the social problems around the use and inequitable access to space, its resources, and infrastructure (Soja, 2014). Thus, the daily situations of coexistence in school spaces could be unfavorable to the relationships between Indigenous and non-Indigenous students. This limitation could potentially influence the teaching-learning process due to the monocultural epistemological imposition of Chilean society and the Western spatial distributions that are maintained regardless of the place where they are located.

Introduction

Space and emotional regulation have been underestimated by Western school education, even when there is a continuous interaction with spaces. Spaces attribute meaning through experiences, aspirations, memories, traditions, and rituals, which evoke people's own thoughts and ideas (Nogué, 2015). Thus, a school space that contributes to emotional regulation is necessary for the achievement of learning objectives in a school for all. In summary, as Hall (1966) states, the perception of space is also influenced by the sociocultural context to which students belong. Thus, meaningful learning requires educational spaces that promote emotional regulation and fascilitate the teaching and learning process of students from all social and cultural contexts.

For this reason, this research maintains that learning is mediated by the ways students regulate their emotions and is linked to the beliefs and meanings attributed to spaces, according to students' society of origin (Solano-Alpízar, 2015). Likewise, in schools characterized by sociocultural diversity, culturally dominant groups tend to impose the contents, forms of emotion regulation, and organization of spaces for learning onto other groups (Riquelme et al., 2016). For example, this happens in Chilean schools when students of Mapuche descent are subjected to Western forms of knowledge developed and imposed by the dominant school and society (Luna, 2015; Quilaqueo et al., 2022; Quintriqueo, 2010).

In Chile, educational processes have been shaped by colonization under a Eurocentric epistemic logic, as noted by Cabrera (2016). While Mapuche sovereignty was recognized in the 17th and 18th centuries, a military occupation called the Pacification of Araucanía resulted in dispossession and territorial occupation, resource exploitation, subordination, racial subalternation, and the massification of various civilizing means, culminating in Mapuche sociocultural extermination (Nahuelpan & Antimil, 2019).

The colonization process in Chile has resulted in the invisibility of the culture, knowledge, and cosmovision (worldview) of native peoples, as the installation of a Westernized system has left out the integration of Indigenous knowledge and native epistemes (Quilaqueo & Quintriqueo, 2017), as well as their own rules of coexistence. Unfortunately, these important aspects of culture are not incorporated into the primary and secondary education curriculum in Chile, including during specific times, subjects, or moments in which Indigenous contents are taught to students. This omission denies students the opportunity to learn about and appreciate diverse cultures and perspectives. In this regard, Riquelme et al. (2016) point out that educational processes must be contextualized in a given social, historical, and cultural space to avoid epistemological gaps (Riquelme et al., 2016) that generate forms of social, spatial, and emotional acculturation in Indigenous contexts. This phenomenon occurs when Indigenous minorities or immigrants become involved in a culture different from their own through sustained intercultural contact (Consedine et al., 2014; De Leersnyder et al., 2020).

Consequences are observed that are related to the acculturation processes of Indigenous peoples and the development of assimilation by the dominant non-Indigenous group (Arenas & Urzúa, 2016). In other words, in the educational space, students simultaneously negotiate between both Indigenous and dominant contexts. This constant negotiation influences the acquisition of students' own cultural interpretations, with impact on sociocultural identities (Tajfel, 1974), cultural clashes, and acculturation processes. Berry (1992, 2003) indicates that this negotiation affects all contact groups (minority and majority) and names four acculturation strategies: a) assimilation, b) separation, c) integration, and d) marginalization. Intercultural education emerged as an alternative approach to acculturation that contributes directly to the development of culturally appropriate strategies for the prevention of negative acculturation attitudes.

In Chile, one of the native peoples is the Mapuche, who currently make up almost 10% of the country and are divided according to their territoriality: the Pikunche in the north, the Williche in the south, the Nagche in the coastal foothills, the Wenteche in the valley, and the Lafquenche on the Pacific Ocean coast (Errázuriz, 2006). Currently, a portion of the Mapuche population resides in rural communities, primarily in the Maule region, the Ñuble region, Biobío, Araucanía, Los Ríos, and Los Lagos, which are considered ancestral territories (Bengoa, 2011). The Mapuche people have been subject to historical and cosmological censorship through colonization, which has sought to control space, bodies and language to fit the Mapuche into a market model based on neoliberal principles (Wright, 2003). This means that there are significant epistemological differences between Mapuche cultural knowledge and the knowledge taught in schools (Quilaqueo et al., 2014; Quintriqueo et al., 2017). Mapuche education, for its part, places great emphasis on the relationship of individuals with the natural, social, cultural, and spiritual environment, while schools focus on synthesizing scientific and universal knowledge for the analysis of reality (Quintriqueo & Torres, 2013).

Methods

This research is qualitative with an interpretative hermeneutic paradigm (Denzin & Lincoln, 2012), with a sense of culture and the everydayness of the educational phenomenon focused on the interrelationship between researchers and participants (Gonzáles & Ruiz, 2011). A collective case study design (Stake, 1999) with a qualitative approach was used to describe and explore the meaning given to school spaces, emotional regulation, learning through visual analysis, and interpretation of the discourse given by the participants of the study, which is supported by an intercultural educational framework (Walsh, 2007). The intercultural theoretical approach of Walsh (2007) recognizes cultural diversity and the importance of considering cultural contexts in education and research. It promotes a relational and collaborative approach that encourages dialogue and mutual understanding. It questions social and cultural inequalities from a critical perspective and focuses on critical pedagogy to foster social awareness and transformative action. The approach recognizes the interconnection between local and global perspectives and emphasizes the importance of addressing educational and research topics from a global and interconnected perspective.

Participants

Fifteen teachers and 24 Mapuche and non-Mapuche students were selected using a snowball sampling method. The search for participants was stopped once the criterion of content saturation was met (Glaser & Strauss, 1967). The participants were selected through non-probabilistic and intentional sampling (Otzen & Manterola, 2017). The study included three rural schools located in the Wenteche territories in the foothills (Nueva Imperial and Cholchol) and the Lafkenche territories along the coast (Toltén). These schools were chosen because of their historical significance as spaces occupied by the Mapuche people in Araucanía, and their specific characteristics associated with natural spaces and pedagogical practices (Quilaqueo et al., 2016). The schools are also characterized by a high percentage of vulnerability and include both Mapuche and non-Indigenous students. Regarding the interest in this topic, the teachers and researchers who participate in this work are committed to the children of the Araucanía Region, their learning, and the development of this region, which is the poorest in the country. We believe that the imposition of Western school spaces in Mapuche contexts potentially affects the teaching and learning process due to the monocultural epistemological imposition of Chilean society. Our research suggests that learning is mediated by the emotional regulation of students and their beliefs and meanings attributed to spaces based on their society of origin, especially in schools with sociocultural diversity where dominant groups tend to impose content, emotional regulation, and organization of learning space on other groups. This work allows us to better understand the social problems surrounding the unequal use and access of space, its resources, and infrastructure.

Instruments

This section describes the data collection instruments used in the study, including visual observation guidelines, photographs, semi-structured interviews, and drawings. These instruments were selected based on their relevance to the research question and their ability to capture different dimensions of school spaces and their influences on emotional regulation and learning.

Visual Observation Guideline for Photographs

The visual observation guideline used was based on the Mapuche architectural design guide for buildings and public spaces promoted by the Directorate of Architecture of the Ministry of Public Works (MOP) in Chile. From this, some areas such as territory (climatic aspects, topography, location, and orientation); buildings (configuration, spatial links, volume, proportions, envelope, image, and symbolism); materiality and systems (materials appropriate to the place, systems that recognize traditions and cultural imaginaries) were derived (Ministerio de Obras Públicas [MOP], 2016). Subsequently, from these dimensions, more specific sub-dimensions were extracted, such as direct connections with the ancestral territory; evocative connection with the territory; geographical, topographical, and climatic considerations; infrastructure appropriate to the place and culture; functional relationship considerations; public spaces and buildings; architectural conceptualizations; icons; symbols; and figurative images; functional relationships; classrooms; textures and colors; selection of construction systems and materiality; floors, roofs, and coverings, openings, enclosures, and exterior enclosures; sustainability; and maintenance.

Photographs

Based on the visual observation guideline described above, photographic images were used as a data collection instrument. The purpose of these images was to make visible those elements that are invisible and subject to interpretation for the enrichment of the context and contents of the research (Bonetto, 2016). For the purposes of this research, the visual analysis of the information was obtained from a total of 766 photographs taken in the three schools that participated. The photographs were created in three moments: 1) when the main researcher went to the field and took photographs of the external and internal spaces of the schools, considering the dimensions and subdimensions described in the visual observation guideline; 2) when the main researcher, along with a professional photographer, went to the field and took photographs of the external and internal spaces of the schools; and 3) when the photographs were reviewed, and those images that had similar criteria and characteristics between the researcher and the photographer were included for the analysis. The selection of photographs for

analysis was based on specific quality criteria and research-appropriate characteristics, as determined by both the researcher and photographer. Their collaboration was essential in ensuring the accuracy and quality of the photographic images used in this study. The photographer contributed technical expertise in areas such as lighting and composition, while the researcher provided guidance on the specific elements to be captured in each image. By working together, they were able to produce a collection of photographs that effectively represented the visual characteristics of the schools.

Semi-structured Interviews

Interviews included the following topics: perception of space; influence of space on emotional regulation; influence of space on learning; school space; and spatial organization. The interviews conducted in this research aimed to explore the meaning that teachers gave to school space and its influence on emotional regulation and learning. For the validation of the interview script, use was made of the conventional Delphi method (Cruz & Rúa, 2018; Varela et al., 2012), a technique that relies on the consultation and consensus of experts in a particular area (Reguant & Torrado-Fonseca, 2016). The semi-structured interview scripts were sent to experts in the fields of education, anthropology, and architecture for review and feedback. Once the experts' comments were reviewed, adjustments to the interviews were made accordingly.

Drawing

Drawing as an instrument for information collection is based on the geographies of childhood, which consists of considering children as actors in the configuration of their spatial experience and as authorized voices in the improvement of the spaces they inhabit (Saiz & Ceballos, 2021). Regarding the collection of information, the students were asked to create a drawing depicting their ideal learning space. Through the visual analysis technique, similarities and differences in the elements represented in the drawings could be identified. This technique allows students to illustrate their experiences and meanings through drawings, which can represent feelings that may not be articulated otherwise. The aim is to explore the social reality and educational phenomenon in a less literal, more symbolic way (Tiscar, 2020).

Analysis Procedure

For the analysis of the images, interviews, and drawings, grounded theory was utilized. The Atlas.Ti software was used to extract different categories based

on the information collected, with the sociocultural context of the schools being the central focus for conceptual organization and relationship of content. The first step in the process was open coding to identify concepts and describe their properties and characteristics, creating categories to facilitate information analysis. A list of codes was then compiled, divided into axial coding and selective coding. In axial coding, categories were linked to the object of study, and in selective coding, categories were integrated into a conceptual scheme that illustrated the organization and relationships of the categories (Rastrepo-Ochoa, 2013). Validity was substantiated through constant comparison and triangulation between codes and classifications (Glaser & Strauss, 1967). The content analysis was conducted in three phases: theoretical triangulation of experts, content analysis, and triangulation of the research team.

Data

The results of this research will be presented in an order that allows us to respond to the proposed objective. In the first instance, the description of schools as educational spaces are analyzed; the codes and categories that were developed through the visual analysis of the photographs are presented. This analysis revealed the elements that characterize the school space as a learning space for students and teachers. To advance this point, the structural elements of the space are included so that it is possible to conceptualize the educational space from the basic components of the educational buildings. Finally, categories and codes underlying the visual analysis of 24 drawings made by students attending the participating schools are presented. These drawing present ideal learning spaces, which are contrasted with the discourses given by teachers linked to school spaces in Mapuche contexts.

Analysis of the Interior Space of the Establishments

The codes identified in the open coding process of the photographs were grouped into five categories: educational materials, construction materials, colors and their meaning, Mapuche cosmovision, and natural areas. In Table 1, these are ordered according to the percentage associated with the number of codes found in each of these categories. Each of these categories will be further explored in the following sections.

Table 1

Emerging Categories of Photo Analysis

Categories	Percentage of Codes
Educational Materials	30.33%
Construction Materials	28.66%
Color and Its Meaning	15.96%
Mapuche Cosmovision	13.89%
Natural Areas	11.06%
Total	100%

Educational Materials

The coding of the visual information indicates that the rural schools that participated in the study are equipped with technological, didactic, and visual stimulation educational material to support education. Most schools have computers, Internet network connectivity, printers, audio equipment (speakers, microphones, amplifiers), surveillance cameras, projectors, and televisions. In addition, schools have integration rooms, libraries, and multipurpose spaces. However, no materials related to Mapuche culture are visible (Figure 1).

Figure 1

Technological and Educational Material

This finding shows that schools located in Mapuche contexts are equipped with didactic and technological material, which can be used by teachers in the development of learning. In this sense, Internet connection and devices to access the network are part of a successful government strategy that allows virtual exploration and access to information that otherwise cannot be reached. The image used as a representative of this category, Figure 1, could exemplify any

school in the rural areas. However, the emphasis has been placed on technological aspects rather than the cultural identity of the Mapuche people.

Construction Materials

In relation to the architecture of the schools and the use of materials for their construction, it is necessary to point out that, in Mapuche contexts, it is not only sought that the buildings symbolize progress but also that they respect the dignity and particularity of the Mapuche culture. In this regard, the materiality of the window frames used in the school spaces consisted of aluminum, due to the bad reputation that the wood frame has acquired for its high humidity uptake, which in the rainy and/or humid climatic contexts that characterize the Araucanía region, becomes a problem (Figure 2).

However, it is believed that in ancient times, from the Mapuche cosmovision, windows were not known or were not an option in construction (neither in rukas or Mapuche traditional households), which did not have natural lighting, heating by solar radiation, or greater visualization with the environment. The only connection with the outside was the entrance door, an important aspect of Mapuche cultural identity because the door greets the sun and its energy and represents a new beginning as a way of life. For this reason, several elements built in Mapuche communities have considered Winka (non-Mapuche) architectural characteristics due to their higher technology and housing quality; Mapuche people often take advantage of these useful features without denying Mapuche socio-cultural identity. The entry of natural lighting through the door not only relates to physical and psychological aspects of Mapuche culture, but also the Mapuche cosmovision, as it contributes to the spiritual, homelike, and ecological environment related to historical Mapuche culture.

Figure 2

Window Frames

As for the exterior enclosures of the school buildings, they are made of wood in all directions, and the floors of the schools are ceramic, which contributes to cleanliness; such floors are resilient and easy to install. Zinc is used in the construction of the roof, which provides resistance to the climate, although it is not sophisticated (Figure 3). The use of materials to build educational spaces is not contextualized to the Mapuche context; coirón, cyperaceae, reed fibers, or oak wood are not used. It also is evident that the materials are designed to provide comfort considering the climatic and environmental characteristics of the region.

Figure 3

Roofs of Educational Establishments

Color and Its Meaning

The use of colors in school design has different meanings, especially in the Mapuche context, since the Mapuche people give a meaning to each color according to their worldview, beliefs, and traditions. The results show that the most commonly used colors in these school buildings are red, both in internal and external walls; white, mainly in internal roofing; and green, in the interior walls of classrooms and libraries (Figure 4). The colors used in the three cases examined were chosen on the basis of aesthetics; in none of the schools were the socio-cultural meanings of the Mapuche people taken into account. The Mapuche culture recognizes two sacred colors: red and black. "Pewma," the Mapudungun word for red, represents life, energy, blood, and the sun, and is associated with the east, dawn, and birth. In Mapuche ceremonies, red is used to symbolize strength and vitality. On the other hand, "Kutral," the Mapudungun word for black, represents death, night, and darkness, and is associated with the west, sunset, and old age. In Mapuche ceremonies, black is used to symbolize the transition between life and death, and the connection with ancestors and the spiritual world. Both colors are

fundamental in the Mapuche worldview and are used in various contexts, including body painting, clothing, the decoration of sacred objects, and the symbolic representation of nature and the cosmos.

Figure 4

Colors Used in the Educational Space

Colors can carry symbolic meanings that are deeply rooted in cultural traditions. In Mapuche knowledge and wisdom, colors are a fundamental element and much of the Mapuche cosmovision is represented in a dual way, such as man-woman, day-night, and light-absence of light. White (or "lig") symbolizes clarity and life due to its inherent brightness, while black (or "wekufu") is associated with darkness and serves as the foundational color upon which all other colors rest. Black's duality lies in its representation of both destructive and stable elements, as it simultaneously embodies the absence of light and the persistence of its own color.

In this sense, colors in the school context become fundamental and respond to the assertion that spaces and their design correlate with educational outcomes. Since the colors are used in outdoor spaces and classrooms, they affect more than the aesthetic aspects of the establishment; they also have an effect on the emotional regulation and learning of students (Kumi et al., 2012; Moore, 2016; Vidal & Avendaño, 2020). However, recognized and Western knowledge are not the only knowledges that can be considered, especially in contexts characterized by social and cultural diversity. In the context of Chilean education, the knowledge and understanding of the Mapuche culture has historically been undervalued, which has led to the adoption of Western Eurocentric characteristics. This has had a negative impact on the sense of belonging and identity of Mapuche children, leading to difficulties in emotional self-regulation (Fuentes, 2020; Riquelme et al., 2016). This situation highlights the need for a culturally relevant education that is informed by educational psychology. Such an education should not only consider how to teach subject matter but also reflect on the emotional effects of these models of knowledge transmission, while actively listening to the emotional needs and values that children express in the learning process.

Cosmovision of the Mapuche People

Mapuche Communion Space (Ruka). Regarding the existence of a space for social communion among the Mapuche people, a Ruka can be observed at one of the schools studied. Rukas are understood as traditional dwellings where Mapuche families have ancestrally developed cultural practices that have allowed them to preserve and reproduce their worldview (Merino et al., 2016). This space is used for some classes, ceremonies, and moments of delivery of content in Indigenous language (Figure 5). The ruka is one of the community and symbolic elements that are characteristic of the Mapuche worldview; it is more than the Western concept of housing. Rather, the ruka includes aspects related to internal family organization, the connection of the domestic unit with productive spaces, and the interrelation with the community environment. Additionally, it represents how the Mapuche people have achieved a space of comfort in a natural context, which implies that they have organically domesticated nature and have become a part of it in an effort to conserve their natural spaces and their culture (MOP, 2016).

Figure 5

The Ruka

As shown in Figure 5, the materials used in the ruka are not the traditional elements that characterize this space; these changes have occurred in response to the low temperatures of the mountainous areas and the strong winds of the coastal areas. For example, variations are observed in the roofs, which traditionally were made of sloping thatch but have been modified to zinc roofing. Likewise, in some cases there is variation in the wood used for rukas, which is the result of ignorance, lack of native material, and/or public agencies that are unaware of the socio-cultural characteristics of the local communities and mainly favor economic aspects over the needs and demands of the Mapuche people (MOP, 2016). Incorporating elements of Mapuche identity into the construction of buildings and public spaces

can have several favorable effects for both the Mapuche community and society at large. This includes greater recognition and appreciation of Mapuche culture, promotion of inclusion and respect, and fostering a stronger sense of identity for the Mapuche community. Additionally, the inclusion of Mapuche elements in architecture and construction can promote cultural diversity while also contributing to a more ecologically sustainable approach to building.

Spiritual Symbolic Elements (Rewe). In the context of Mapuche culture, rewes are significant spiritual elements that can be observed in two out of three schools examined. A rewe is a wooden altar that plays a crucial role in the Mapuche cosmovision, as it symbolizes the worlds in which the Mapuche worldview was conceived. A rewe is a tangible item that allows the connection between the natural and supernatural elements that exist in the Mapuche cosmology. The rewe in Mapuche culture holds primarily religious significance. It is essential to grant a sense of existence to this sacred item in a given space, in this case, schools, in order to honor its spiritual significance.

Moreover, the rewe is associated with various supernatural elements that are central to the Mapuche culture. These elements include but are not limited to nguillatún, which is a sacred ceremony that takes place around the rewe and is believed to restore the balance between the natural and supernatural worlds; the pillán, which are spirits or ancestors that inhabit and protect the natural elements and surroundings; and the kalku, which are evil spirits that can bring misfortune and illness. Despite the spiritual significance of the rewes and their association with key elements of the Mapuche cosmovision, they are not widely utilized by the educational community in the schools studied or are only used during specific events, such as Wetripantu (see Figure 6). This lack of utilization may suggest a need for greater intercultural awareness and understanding in educational contexts.

Figure 6

The Rewe

In summary, the cosmovision of the Mapuche people is mostly invisible in the school settings examined. Rather, Western educational practices that do not consider the Mapuche people's familiar educational knowledge and do not seek an intercultural link in terms of the organization of educational spaces prevail. This invisibilization of Indigenous worldview indicates a process of social and cultural discrimination that is marked by the folklorization of ancestral symbolic elements.

Natural Areas

In the participating schools, natural spaces predominate, which are divided into: a) recreational spaces, consisting of open courtyards with dirt or grass floors; b) vegetable gardens, which are used mainly for educational purposes, c) intentional cultivation of tree species that contribute to the aesthetics of the school, and d) native natural spaces, which have not been altered by the educational community. In all cases, there is a concern on the part of the educational establishments for the respect, care, and preservation of these natural spaces (Figure 7). It should be noted that the local environments and immediate natural surroundings are an excellent tool to promote learning. Didactic resources built with materials from the surrounding environment can provide excellent experiences for learning, contributing to identifying properties, classifying, establishing similarities and differences, and/or solving problems so that the teaching work and the relationships with students are facilitated and become more effective (Toapanta, 2017).

Figure 7

Educational Garden

This interaction with nature does not mean that there will be a process of extraction of natural resources for the creation of materials; rather, the reuse and recycling of elements that are part of the immediate environment are emphasized. In this

sense, it can be observed that in all three school settings examined, there is a concern on the part of the educational establishments for the respect, care, and preservation of these natural spaces. To synthesize, as indicated by the MOP (2016), there is a clear challenge to understand the diversity and cultural connotations associated with the built environment, its buildings, and the people it serves. Therefore, each construction can be designed to reflect the specific meanings that are shaped by morphology, spatiality, and functionality. This approach allows buildings to acquire a sociocultural relevance that responds to the formal elements associated with each community and context, with their own meanings and expressions.

Ideal Learning Spaces According to the Students' Discourse

Regarding the analysis of the students' drawing of their ideal learning space, five categories were revealed: a) school elements; b) natural elements; c) colors; d) home elements; and e) socialization agents (Table 2).

Table 2

Ideal Learning Spaces According to the Students' Discourse

Categories	Percentage of Codes
School Materials	43.20%
Natural Elements	30.50%
Colors	14.00%
Socialization Agent	7.60%
Household Items	5.04%
Total	100%

The categories with the highest percentage of codes correspond to natural elements and school elements, since the drawings provided by the students tend to represent the traditional classroom located outdoors, giving importance to learning in contact with nature (Figure 8).

Figure 8

Student Drawing 1
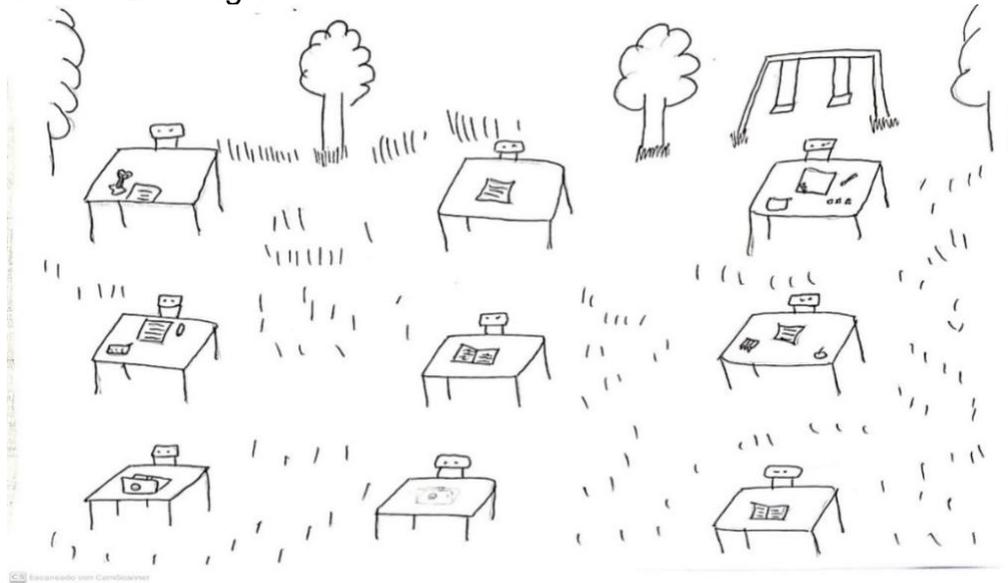
Teachers gave similar attention to nature, declaring that the ideal spaces for classes are in open spaces, free, or in contact with nature:

> I remember a class about four days ago when we saw the water cycle in the courtyard with the arches of, with the arches, I don't know, with one of these black curtains, raschel mesh, something like that, raschel. I don't know what they call it, some ice and some elements that are concrete, to have thrown water to the kids, and to have shown them clouds and to have explained the water cycle in this open space with a radiant sun. Thank God, that day: concrete, throwing water on the kids, showing them the clouds, and explaining the water cycle in this open space with a radiant sun, thank God, that day. I think those are the spaces where we can share and where we can, where they can explore and learn by doing. (Teacher 3)

> If I have a natural science class where I have to work on the ecosystem, obviously, I don't look at it inside the classroom, I look at it under the trees we have; we occupy the environment according to the situation. This does not mean that, obviously, I am always going to occupy it, but we have suddenly arrived in the classroom and, it is like, the day is so beautiful, the children suddenly suggest, like, "Aunt, the day is so beautiful, we could do the activity outside." (Teacher 6)

In addition, in the visual analysis of the drawings, it is evident that only a few students include the figure of a teacher in their ideal learning space (Figure 9). While the teacher can play a role in the educational process, these drawings suggest that students may value other factors more when imagining their ideal learning environment.

Figure 9

Student Drawing 2
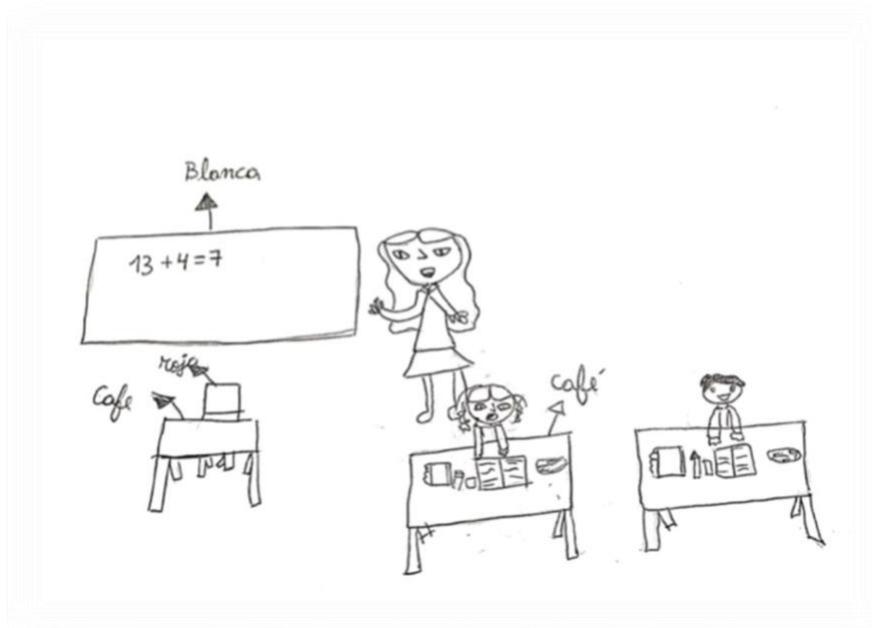
In other words, currently, there is a greater emotional connection between teachers and their students, which has a positive impact on the well-being of both. This emotional connection is reflected in the statements of teachers when they say:

> Because I like the children to learn and I like to teach them, and when they manage to grasp what you want to deliver as learning, it is very satisfying. (Teacher 14)

> I love my career, I love my job, so I got more excited and now that, I do not know, I spent a year and a half visiting the children from time to time, once a week to some or calling them on the phone. Getting to see them again was already entertaining because I have always said that I like the chaos that is formed in my classroom. Now there is not so much chaos because everyone has to be super structured, they have to be at their posts, masks, here. They can't stand up. they can't, so we are limited in that sense. It feels great to see the children again, to hear the shouts, "Aunt, he did this to me, Aunt, he did this to me," so that is fun. So I am very happy to go to work. (Teacher 15)

In summary, the analysis of the drawings made revealed the students' sense of belonging to the school space. Most of them represented the school or elements that make up the school, such as tables, chairs, teachers, classmates, playgrounds, among others (Figure 10).

Figure 10

Student Drawing 5
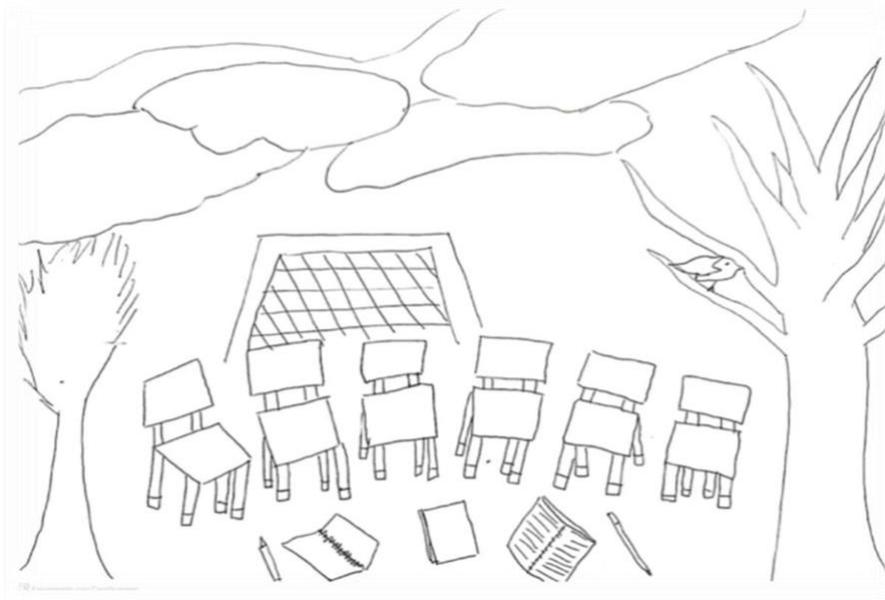
This belonginness to school is also confirmed by the teachers interviewed when they say:

> I think that [there is] more than learning. I think that, since they are from the same place, they are immersed there. It is like something daily, like they are in their own space, as if to say, where they feel welcomed, like part of the space, I think. (Teacher 14)

> If they have had a good experience with us, the children feel totally identified with the school and, obviously, they learn to respect, to take care of the spaces, everything. (Teacher 13)

Discussion

The results of the visual analysis of the spaces show that they obey a unified conception based on standards fundamentally centered on Western, Eurocentric culture of spatial organization. This is a reasonable use of spaces and materials, but which, unfortunately, marginalizes identity elements of Mapuche families, even though nearly 20 Mapuche communities are located around two of the schools analyzed and eight in another (Sepúlveda-Varas et al., 2019). For example, in the case of the symbolic elements representative of the worldview of the Mapuche people, the ruka is an example of a constructed space with cultural relevance,

where the orientation of the buildings is subject to the seasonal and daily path of the sun, along with the meanings of the cardinal points and natural landmarks (MOP, 2016).

In the ruka, the main door is always oriented towards the direction of the sunrise; however, this orientation is not always respected and doors are often not in the orientation indicated by the Mapuche worldview (Sepúlveda & Vela, 2015). In other words, the location of doors in schools often do not follow the Mapuche tradition, despite the existence of government guidelines for the construction of public spaces in this context, where natural elements, landscaping, materiality, use and distribution of spaces, and symbolism are considered (MOP, 2016). Natural spaces also are a fundamental dimension of the Mapuche people's worldview (Neira et al., 2012).

In the three schools studied, natural spaces are predominant, evidencing their care and preservation in the educational context. The focus on nature in the school settings foster a connection between students and the outdoor environment and enhance their comprehension of the fundamental elements of the Mapuche worldview. These elements include the püji, which represents the earth as the territory and source of material and spiritual energy for all living beings; püjü, the spiritual energy that dwells in the earth and provides life to people, while guiding their relationship with the environment and society; the wenu mapu, which refers to the vertical space that sustains the earth from higher spirits; the nag mapu, representing the horizontal dimension of the earth and its territory as a space for the generation of physical and biological life; and, most importantly, the az mapu as a regulator of behavior and a harmonious link with the natural environment (Melin et al., 2016; Poblete, 2019; Quintriqueo et al., 2015).

As Kayama and Yamakawa (2020) point out, when sociocultural elements are not considered in the school, students are placed in acculturation processes where they are expected to adapt to the school, which can lead to the loss of a sense of belonging accompanied by social isolation and withdrawal. However, as observed in this research, none of the educational establishments studied considered Mapuche cosmological elements in their structures. This absence evidences a process of denial and sociocultural absorption that can result in homogenization, acculturation, and domination of the majority culture over the minority culture (Aparicio et al., 2015; Ibáñez-Salgado & Druker-Ibáñez, 2018).

Mokhtar et al. (2016) and Montiel (2017) point out that the construction of adequate educational spaces for learning is an increasingly important concern. In this sense, the results of this study reveal that insulation and durable materials in the construction of schools show concern for the climatic environment where schools are located. However, regarding the architecture and organization of the visualized school spaces, the traditional Western model is maintained and the Mapuche culture, history, and worldview is invisibilized and, thus, marginalized (García & García, 2019; Mokhtar et al., 2016; Montiel, 2017).

Regarding the use of colors, in none of the cases were the colors used for purposes of sociocultural recognition of the Mapuche people. There is evident

disconnection between the Western meaning given to these colors and those given to them in the Mapuche culture. From Western culture, red signifies energy, vitality, power, strength, and passion and is used to intensify the body's metabolism with effervescence and passion; white signifies purity, innocence, and optimism, and contributes to purify the mind to the highest levels; and green signifies equanimity, moderation, balance, and tradition, and is useful for nervous exhaustion, balance of emotions, revitalization of the spirit, and stimulation of compassion (Flores, 2017). In constrast, in the Mapuche cosmovision, red (*kelü*) represents flowing blood; in the sphere of the feminine, blood flowing through menstruation is powerful, while in the masculine it symbolizes war; white (*lig*) represents life, although in some contexts it also represents mythical and lethal figures; and green (*karü*) is the representative color of nature.

In addition, the relationship between spaces and the regulation of emotions can be evidenced, since the organization, design, and construction of spaces can impact behavior and emotions (Contract Workplaces, 2020; Delgado, 2015; Mora, 2018; Sutil & Perán, 2012). In school contexts, as Orellana-Alvear et al. (2017) reveal, both students and teachers instinctively seek those spaces that provoke degrees of comfort and well-being, which for the purposes of this research were natural spaces. Natural spaces in a school context can promote positive individual and socioemotional attitudes in children and teachers (Adams, & Savahl, 2016; Bates, et al., 2018; Castillo-Retamal & Cordero-Tapia, 2020; Gareca & Villarpando, 2017; Richardson et al., 2017).

Children belonging to the Mapuche people have a strong connection to natural spaces, a connection associated with physical, psychological, social, and spiritual balance (Alarcón et al., 2021; Alonqueo et al., 2020; Beltrán & Pérez, 2018; Halberstadt et al., 2020; Meza-Calfunao et al., 2018; Quilaqueo et al, 2014; Quintriqueo & Torres, 2013; Torres & Quilaqueo, 2011). It is for this reason that students in the study represented natural spaces as their ideal place for the development of the teaching and learning process. This finding is supported by Velásquez (2005) and Ibáñez et al. (2021) when they suggest that the surroundings and education are interrelated, and the proper arrangement of these factors enhances and refines the learning experiences of minors.

Conclusions

Education is a fundamental aspect in the development of human beings, not only from the dimension of theoretical and practical knowledge, but also in more transcendental aspects such as knowing how to be and knowing how to live together or relate to others. Although there are various spaces conducive to learning skills that allow children and young people to develop in socially and culturally diverse societies, it is important to recognize that there is no one-size-fits-all approach to education. What may be a significant space for learning for some may hinder the main objectives of education for others.

In a scenario of social and cultural diversity, the invisibilization of Indigenous knowledge and wisdom has been detrimental to a large part of the students of Indigenous origin in Latin America. Although progress has been made in making this knowledge visible with the incorporation of interculturality, education is understood as the constant dialogue of knowledge and wisdom between culturally unique societies and peoples. This dialogue has been directed, from the beginning, unidirectionally by the dominant culture to those of Indigenous descent, preventing intercultural education for all students. This approach has resulted in a problem within both the educational system and individual schools, perpetuating discriminatory and segregating practices, as well as the emotional assimilation of both Indigenous and non-Indigenous students. This approach has further widened the gap of inequality in opportunities and learning conditions. Additionally, it has encouraged the erosion of cultural identity and, in certain cases, social and cultural abandonment by Indigenous students as a means of fitting into and being included in the Western, Eurocentric society. Our research shows that it is important to emphasize social and cultural elements in education. This helps different cultures connect, interact, and acknowledge one another, which is crucial in schools and would allow for the optimal development of learning for all students. This intercultural educational approach is not only for Mapuche children, but also for non-Mapuche children. The contextualization of educational spaces would be a positive aspect to strengthen relationships between Mapuche and non-Mapuche students, creating a social and cultural dialogue that promotes the recognition and strengthening of the physical, psychic, social, spiritual, and personal identity of each student.

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