Politicizing the Pictogram: *Participatory Design Approaches within Indigenous Community Communication*

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Pictograms figure strongly in the culture and history of dominant *modern* design, yet they have long supported heterogeneous traditions and histories of collective counterpower. These devices can help to transition between images and words in intercultural scenarios: they construct dialogue and function to strengthen collective situated knowledge underpinning broader, counter-hegemonic communication. Accordingly, the article builds on an empirical study of a participatory design project contributing to an indigenous popular education initiative in the Ecuadorian Amazon, a project aimed at designing, collaboratively and interculturally within the framework of indigenous community communication, a pictogram system to support representation and reactualization of knowledge and practices *with and by* indigenous youth and their communities. The findings demonstrate how the pictogram, a seemingly passive graphic symbol, can function as a device in collaborative, politicized ways within the context of these indigenous societies. Accordingly, the alternative design-research and production framework introduced in the paper supports and learns from the histories of indigenous struggles, contributing to design *with* marginalized communities in diverse social realities.

Keywords – Community Communication, Indigenous Communities, Latin America, Participatory Design, Pictograms, Popular Education.

Relevance to Design Practice – Demonstrating how crucial a contextualized yet relational approach is, the project explored socio-cultural aspects of community-led design processes and production. The results highlight how learning from and striving to sustain heterogeneous resistances in a practical way contributes to an intertwined local-global theory and practice of design that engages with its political dimensions and accountabilities.

Introduction

Participatory design (PD) research has begun expressing strong interest in reformulating and contesting the field's dominant codes, especially as many design researchers gain a heightened awareness of historical global knowledge-making inequities (e.g., Chai & Del Gaudio, 2021; Reynolds-Cuéllar et al., 2022). Supporting and expanding from various histories of collective counterpower can guide design-research production's struggle to become a more assertive part of the coding that interprets, exposes, and disputes social reality (Pinto et al., 2022; van Amstel et al., 2021). This article explicates a PD approach that builds on research in communitarian, participatory processes in the South[1] through the lens of a project demonstrating how a seemingly passive symbol—the pictogram—can function as a device in collaborative, politicized ways in Ecuadorian Amazon indigenous societal settings.

Rather than merely communicate received information, these co-designed graphical devices operate with and extend complex plural- and intercultural notions of identity and self-representation. This empirically grounded finding demonstrates the importance of a contextualized yet still fundamentally relational approach to PD processes (alongside the design objects involved). This relationality is multiple: local mobilizations of participatory design enter dialogue with a regionally understood framework of communitarian communication; the pictogram itself activates the interplay of visual codes and symbols that act across subaltern and dominant cultures, thus serving as an identifier within and across distinct Ecuadorian Amazon indigenous identities, known as nationalities[2]; and this device functions directly within the PD processes as a reference point and focus.

We anchor our argument in an in-depth examination of the PD project Emergencia de Educación en la Amazonía (Education Emergency in the Amazon), pursuing the collaborative intercultural design of a pictogram system for increasing inclusion and identity *with* and *by* indigenous students and their communities in Amazonian Ecuador (Pinto & Botero, 2021), it was established in 2020 by a collective of indigenous youth, their communities, and practicing design researcher, all acting as co-researchers.

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This initiative was undertaken within a framework known as indigenous community communication. The project and study proceeded hand in hand as we gathered data on education in the Ecuadorian Amazon while developing processes and materials—in the form of a pictogram collection—with communities.

Usually understood as graphical symbols that convey meaning through pictorial resemblance to an experiential or other element, pictograms form complex image systems. For many indigenous peoples, they represent shared voices and reality, languages, history, knowledge, and practices in relation to their territories (Rivera Cusicanqui, 2015; Wengrow, 2022). Because pictograms' deep rooting in indigenous knowledge and history exists alongside strong anchoring in modern design's culture/history, they are an especially intriguing device in intercultural settings with complex geopolitics. As they participate in constructing dialogue, they unveil relations between traditional and contemporary visual forms. Accordingly, we posed these research questions: How can pictograms be mobilized as PD tools to support indigenous communities' knowledge(s) and communication of their demands? In which ways can working and thinking with images contribute to politicizing the pictogram?

The first two authors are *mestizo*[3] women from Ecuador and Colombia, respectively. They work between the North and South, overlapping academic and activist design, which creates a complex positioning that is not always straightforward to acknowledge. The third author, originally from the United Kingdom, has accumulated solid research experience in Latin American design-activism practices. Collectively, we are motivated by our belief in a need for thinking in terms of pluriversal design (Escobar, 2018) that avoids serving capitalist interests and favors more collaborative and place-based approaches. Beyond this broader notion, and within a struggle for understanding and sustaining heterogeneous compositions of society (Orellana Aillón, 2020), we focus on the theory and practice of design that, in its core processes, contributes in practical ways to multiple resistances. Doing this demands

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Andrea Botero is an associate professor (New Frontiers of Design) at the School of Arts, Design and Architecture of Aalto University, where she is also a Finnish Research Council Fellow. Her work engages with the possibilities and contradictions of participating in design and designing participation today. She is interested in what counts as design, what other practices for world-making are there, and which ones we need to call into being. Her research aims to understand how collectives (broadly speaking) come to understand the design spaces available to them and how designers could infrastructure those spaces better, especially looking to support livable futures.

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addressing the weight of history and structural continuities in combination with the persistence of social hierarchies and their symbolic manifestations. This also requires moving beyond totalizing, and generalist calls for *design as politics* (Fry, 2011). In order to make such broadly expressed ambitions actionable, deep investigation and understanding of the specific, empirical contexts in which design, PD in particular, is enacted are necessary, alongside accepting the complex, relational networks that exist between local, regional, and global practices and discourses.

Hence, it is vital to recognize our project as an indigenous popular education initiative, where *popular* refers not to the *mass culture* domain readily accorded attention in Anglophone academic circles but, as is typical in Latin-American discourse, to practices/means that are accessible and geared to the needs of subaltern society (De los Reyes & Botero, 2012; Pinto et al., 2022)—the working class, peasants, and indigenous people. That is, contexts, materials, actions, and discourses of the communities we worked with functioned in opposition to domination / submission paradigms (Echeverría, 2010, 2013). For us, this is resistance, a form of collective creative production wherein marginalized communities reactualize their skills in producing, voicing, and advocating their knowledge(s) and associated continuous transformation (Giroux, 2011; Pinto et al., 2022).

The reader requires some background at this point. Ecuador's Amazonian indigenous society consists of a population of 265,100 people spread across 120,000 square kilometers of rainforest. This space is marked by huge inequalities in comparison with the wider Ecuadorian context. In 2012, 74% of its women did not achieve secondary-level education, with 50% in the poorest quintile (Rios-Quituizaca et al., 2022). A further related challenge is visible in the remote, distributed, and technologically isolated reality of day-to-day life. In an example focused on just one of the Ecuadorian indigenous nationalities, the Shuar have less than half the access to mobile-telephony of Ecuador's *mestizo* population (Martínez Suárez et al., 2015).

Our argument from the empirical study is strongly informed by two vital phenomena. Firstly, pictograms function as counter-hegemonic devices. We explored this explicitly by delving into the traditional and contemporary visual memory of indigenous communities in Amazonian Ecuador. Putting a special focus on pictograms as intricate image systems that facilitate alternative knowledge-building processes (Wengrow, 2022), we followed in the path of other Latin-American design researchers working from/in the South by building upon the groundwork laid by the region's popular-education tradition, where knowledge construction is positioned as resistance and collective struggle for emancipation. From this foundation, our work draws inspiration from critical pedagogy, with particular regard to using images to represent generative themes in collective efforts (Freire, 2005). We found additional guidance in the methodology of participatory action research (Salazar, 1992), an iteratively oriented approach that, alongside critical pedagogy, exerted a crucial influence on the early conceptions of PD (discussed by Serpa et al., 2020). Correspondingly, we answer Silvia Rivera Cusicanqui's (2015) invitation to work with image systems as a *third shared space* for transitions between language and the experiences of a community

throughout history. From these starting points, people engaged in the learning/research process can navigate contradictions while articulating community, indigenous, and planet-encompassing issues. A final noteworthy guiding thread is the highly significant connection between image and language, as stressed by Ngugi wa Thiong'o (2015); we must acknowledge its crucial role in constructing social and historical identity, enabling us—or not—to creatively confront the world.

Secondly, intense work alongside the many co-researchers drew our attention to Ecuadorian indigenous peoples' ways of doing and knowing that are embedded in indigenous-community communication (ICC), or *Comunicación Comunitaria Indígena.* Since ICC experiences have formed an important aspect of community struggles to defend rights, build memory, and develop indigenous communities' own political identity (Magallanes Blanco, 2020; Ramos Martín, 2018), we consider it vital that such work dovetail with that tradition. Within the domain of popular-communication studies, also going by names such as community communication and communication for social change, developed in the socio-historical contexts of Latin America, ICC as a political-communicational practice takes a position from which it can contest hegemonic mainstream media (Flores-Márquez, 2021). It is guided by a bottom-up approach embracing diversity of knowledge, a strong connection with social struggles, and an alternative configuration driven by a will to engage in public debate (Suzina, 2021).

Next, we address pictograms from multiple angles—of different histories and experiences—to illustrate routes to envisioning them as counter-hegemonic PD tools and devising instances of them accordingly. This entails framing our analysis in terms of concepts and practices of popular communication, communitarianism, and interculturality that have shaped and sustained ICC processes as resistance in the Ecuadorian Amazon. Then, presenting the design case explains our journey of PD and collaborative design, after which we examine pictograms as a way of working and reflecting on their possibilities and limitations as image systems for representation and intercultural communication. Finally, we can turn to the ways in which outcomes from experiences of this nature could expand, inform, and add layers of social/political reflection to participation and practices of collectivity in design research.

Pictograms Beyond Dominant Narratives

I don't know whether to consider them [a set of graphical elements] in the concept that you chose [as] pictograms. However, for the Siekopai case, these are languages of communication and of interrelation with beings from other dimensions of the world. Such is the case [...] [with] some figures, some writings, as our grandparents call them: toyás.

—Justino Piaguaje. Former president of the Siekopai nationality, active member of the San Pablo de Katëtsiaya community, and father of Esperanza (Siekopai co-researcher)[4].

Pictograms have become tools in modern universal-communication solutions and a cornerstone of efforts to standardize information and communication (Bresnahan, 2011; Schiller & Young, 2010). While usually applied worldwide for signage, digital user interfaces, and instructional text, they can do much more, presenting a visual argument that stimulates *active participation* for diverse sectors, as Marie Neurath (1974) noted. Thus, pictograms have served education and communication experiences more profoundly, too. A well-known example comes from Isotype, originally developed for pictorially communicating statistics to inform the general public about complex social and economic issues via simple image language. As education and communication tools, pictograms read as signs rather than literal depictions: the figurative image is only the starting point in a chain of associations (Lupton, 1986). Hence, pictograms' readability and meanings rely largely on detail condensed into schematic signs and their particular yet easily understood grammar (Bakker, 2012; Jansen, 2009). In this sense, pictograms are designed systems and, arguably, forms of writing—ones intended for take-up to serve information and communication by a wide variety of people. Therefore, they possess rich potential as counter-hegemonic devices.

Pictograms as Complex Knowledge Systems in Amazonian Ecuador

For an entry point, our argument requires some understanding of the context-specific functioning of imagery in Amazonian Ecuador. Firstly, one must cast aside any dichotomous views of image systems as *primitive* isolated acts of making marks, patterns, or figures. As visual archaeologist David Wengrow (2022) stressed when introducing a collection of papers about image systems in human cultures, complex image systems have given technological and cognitive support to knowledge-building processes for cultures that historically did not rely on writing systems. Carlo Severi's (2022) contribution to that collection lays out several ways in which pictograms—as a process—do not stand in some symmetrical *oral* opposition to the written domain. Accordingly, it is imperative to regard pictograms as sophisticated forms of visual representation used in combination with words, to various degrees, to sustain knowledge and memory, particularly through rituals. Likewise, emphasizing that they do not operate in isolation, Els Lagrou's contribution takes the argument further: for indigenous peoples in the Amazon, images form visually coded knowledge-transmission systems that are "positioned in complex networks of relations externalized in formal properties, which exude both systemic constancy and systematic variation" (2022, p. 44). Many indigenous communities, with those inhabiting the area now known as South America certainly among them, have long applied a wide array of oral, gestural, and iconographic forms of knowledge production and communication (see Beltrán et al., 2008).

Those ways of thinking and doing contribute to resistance of knowledge and practices otherwise, which endure over time through varying conditions. An exemplar in this regard is the Incas' Guamán Poma de Ayala (1980), whose chronicle denouncing the Spanish Empire's mistreatment of indigenous peoples amid the colonization of Perú mobilized 400+ image

systems. His work explored the collective perspective on the self in opposition to an imposed social reality. Indigenous peoples in Amazonian Ecuador have made, used, and circulated image systems such as pictograms, graphisms, or visual designs for millennia. These are exemplified by the Siekopai and Siona toyás, which Siekopai leader and project participant Justino Piaguaje deemed *present in textile garments, ceramics, body-painting, and other traditional and new writings* (project ref. 2022, S-C2). By embodying support for heterogeneous traditions, histories, and experiences, pictograms of this sort *express sophisticated dialogical theories of human society and politics*; hence, their establishment *is often linked to significant break-throughs in other fields of knowledge* (Wengrow, 2022). For indigenous peoples in the Ecuadorian Amazon, pictograms or image systems act as material representations of a person's knowledge about the world, in Piaguaje's words—knowledge obtained via such means as sharing and reflecting on what is seen in *yajé* (sacred plant) rituals, where aesthetics represent social constructions of significant relationships with the environment (García Labrador, 2020). Visual systems produced and reproduced by the region's indigenous peoples—toyás and various others—express the cultivation of historical, social, and political identities woven into complex relations with territories.

Hence, pictograms' intricate relations cut across modern contexts, both indigenous and others. Before the project, we initiated a collective exercise against this backdrop, for elucidating the extensive indigenous current visual memory of the territories we were working with. This visual memory is visible in at least

two ways: The first is traditionally associated with aesthetic manifestations in visual displays evident in textiles, attire utilizing products of nature, body- and face-painting, ceramics, etc. (see Figure 1) express historical identities/culture and traditional forms of social, economic, and political organizations. Alongside this association, it presents itself in contemporary referents actively rendered visible in representation and informational media of indigenous origins, from printed media by organizations aligned with specific indigenous identities to video journalism. Some examples are the October 2020 special issue of La Voz de la Confeniae on coronavirus and health in the Amazon, a series of video reports on particular indigenous peoples and their life in the rainforest (Galeaz, 2021), and situated data visualization such as infographics for COVID-19 prevention among the Waorani (Society for the Anthropology of Lowland South America, 2020) (see Figure 2). Accordingly, our intervention is situated relative to a larger visual culture at multiple levels, with the visual referents presented here being only a small sample.

Use of images in Popular Education and Design Research from/in the South

In Latin America, popular education is an approach, methodology, and movement of striving to empower marginalized communities through democratically focused interactive learning that values experiences, fosters critical thinking, and addresses social issues collectively (Giroux, 2011; Instituto Cooperativo Interamericano, 1997; Pizzeta, 2009; Sandoval et al., 1972). Its extensive work with images stretches far beyond appropriating them as simple
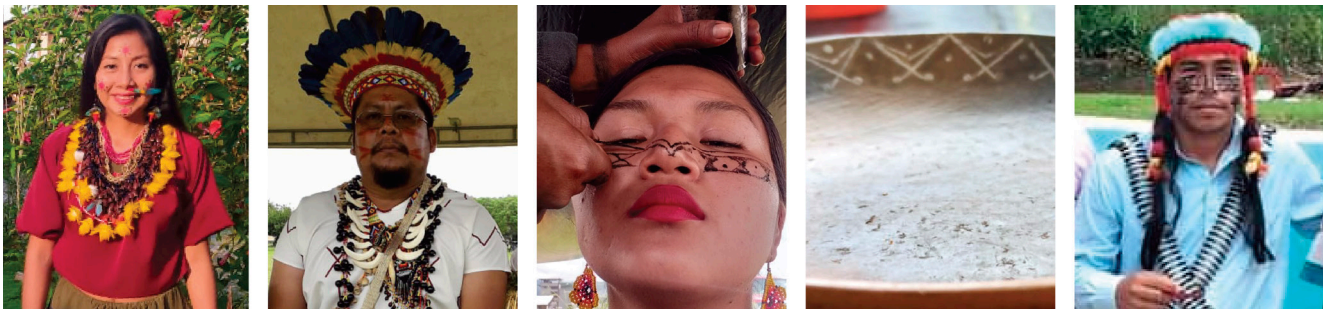

Figure 1. Traditional visual referents: A'i Kofán attire on Shakira Yumbo (A'i Kofán co-researcher); Siekopai attire on Justino Piaguaje (Siekopai participant); Kichwa awina, wituk-pigment face-painting, done on Lizbeth Tánguila (Kichwa, co-researcher); Siekopai toyás represented in ceramics; Achuar hair-wrapping.

Figure 2. Contemporary visual referents: Indigenous-peoples organizations' visual identities, indigenous Amazonian magazines, rainforest-living videos, and Waorani coronavirus infographics.

visual aids. Image development and use have formed a pillar of dialogue-based methods promoted especially through critical pedagogy. In critical pedagogy, a popular-education-based emancipatory philosophy and social movement founded by Brazilian philosopher *cum* educator Paulo Freire in 1960, the process of working with images stems from a collective investigation of people's thinking about their reality, sustained in the transmission of stories. Here, image-making coheres around issues pertinent to the popular classes rather than around narratives of political, economic, or academic elites. Themes generated from collective discussions become coded, through visual (and sometimes tactile/auditory) means, for communication that can then be articulated via appropriate channels for the people involved (Freire, 1971, 2005). These themes and their representations allow fuller reflection on a collective experience and history. In turn, space opens for recognizing common strengths and struggles. Most importantly, the approach stimulates a constant orientation to action.

In recent decades, practitioners have integrated critical pedagogy into such approaches as participatory action research, in which such media as illustrated history and comics provide frameworks for composing/compiling information collected with communities (Chalarka, 1985). This is a process in which, per Joanne Rappaport's characterization (2018), research grows into a collective exercise of constructing knowledge through 'drawn notes.' On numerous paths from the point of focus on action, people working with image systems have nurtured an important component in counter-communication processes aimed at contesting the entrenched power structures reinforced by the state and other hegemonic systems. Among these people are design practitioners and researchers from/in the South who embrace the rich history of images in popular education. They have begun employing image systems for a critically oriented understanding of stories narrated *from below*, to support popular struggles (Del Gaudio et al., 2016; Garcés, 2020; Mazzarotto & Serpa, 2022; Serpa et al., 2020). For example, the work of Iconoclasistas (2020; see also Risler & Ares, 2015) utilizes pictograms and mapping techniques for interventions conducted in partnership with popular-education groups and social movements. These collaborative-design interventions engage with tangible realities of marginalised communities for the objectives of influencing or even reconfiguring the dominant infrastructure.

Indigenous-Community Communication: *Three Key Concepts and Practices*

A click away, the neo *uwishin* (wise men) and the digital *kakaram* (warriors) make social networks their new battlefield: the former, on Twitter with their *tsentsak* (invisible arrows), confront and question power, while the second, on Facebook, post, broadcast live, publish photos, upload videos, share, give likes in favor of life and against extractivism. Now, the smartphone replaces the *tuntui* (percussion instrument) and the *nanki* (lance). The virtual mesét (war) in the upper Amazon is as present as in the times of our grandparents.

—Kaar Etsa Atamaint, Shuar indigenous scholar (Lanceros Digitales, 2021).

Indigenous-community communication operates as one local framework within which the project's PD development took place. It encompasses creative, dialogue-focused interventions and participatory practices that can be activated to resolve a community's practical problems, while on a broader playing field it supports resistance processes by promoting political engagement. As one might expect, at such processes' centre are reflecting and understanding the worldviews of indigenous peoples, their communities, and their relations with territory (Martínez Matías, 2019; Muniz & Tapia, 2021). Three concepts and practices within ICC prove pivotal to grasping the pertinence (and limits) of the interventions we participated in: popular communication, indigenous communitarianism, and interculturality.

For ICC, **popular communication** renders knowledge and practices visible, simultaneously challenging certain symbolic and material representations of social reality. In the Ecuadorian Amazon—a profoundly pluri-cultural territory, with 11 distinct indigenous territory-based peoples—indigenous peoples have actively built communication strategies and media from which to speak with their own voice. Work by the Lanceros Digitales communication team, region-wide magazine La Voz de la Confeniae, and Tawna's series of Amazonian audio-visual productions (Montahuano, 2017) can be cited as examples. These communication resources furnish important spaces for counterpower creation (Campos, 2019; Villalva Salguero & Villagómez Rodríguez, 2020) and resistance (Echeverría, 2010, 2013). Here, both formal and non-formal processes of representing knowledge, traditions, and struggles gain active links through an indigenous movement drawing together *organizations and social movements that claim indigenous identity so as to demand social changes within the framework of specific political actions* (Quijano, 2014).

As defined by the Confederación de Nacionalidades Indígenas del Ecuador (2012), **communitarianism** structures a society for sustainment by a production mode based on reciprocity, solidarity, and equality in which all members participate actively. An important facet of this mode of production is that understanding a communitarian way of doing hinges on a profoundly integrative concept of territory. For Ecuador's indigenous inhabitants, this broad-based notion covers not merely physical space but also political space where life develops in interconnection among the land, human beings, and nature (Confederación de Nacionalidades Indígenas del Ecuador, 1994, 2012). Territory, in this conceptualization, forms the basis for social reproduction and reactualization practices and for resources that support self-representation. Given these prerequisites, ICC engages with an alternative way of *doing* communication and media that builds dialogue between organizations' different organizational levels. This involves the ongoing redistribution of grassroots participation across three structural levels. Firstly, the grassroots communities are situated within a nationality's territory, sustaining interactions between elders, family members, children, young people, etc. Secondly, the leaders of the nationality make decisions in constant consultation with grassroots communities in *actuar con los territorios* (acting with the territories), allowing connection and accountability to popular classes. Finally,

various nationalities' organizations engage in dialogue within the plural-cultural indigenous world and, at the same time, with other (Northern, whiter, capitalist) worlds.

The complexity of creating equitable relations between cultures requires the third element**: interculturality** addressing the presence of diverse cultures, indigenous and non-indigenous, but also the dynamics and evolving relationships between them. From the perspective of racialized, economically exploited, and oppressed indigenous communities, interculturality has served as a strategy for enrichment designed to permeate a society wherein cultural and linguistic variety holds power as a transformation resource (López, 2009). Here, intercultural practices—including communication—are angled to assist in action against those assimilation- or multiculturalism-based positionings, which held sway in the past, that recognize diversity but without questioning the structures of social domination. For example, the practice of employing contemporary visual referents (see Figure 2) to create resources of representation that strengthen indigenous peoples' identity is decisively aimed at supporting their participation in the public sphere. Meanwhile, advocates of public policies consistent with indigenous communities' rights have employed visualization of needs, demands, and knowledge to empower those communities.

In Ecuador, the consolidation of ICC processes persists through the recreation of popular communication, communitarianism, and interculturality. However, sustaining these concepts and practices entails a constant struggle against power structures. Therefore, there is an ongoing need to recreate material resources for representation and information grounded in the perspective of indigenous reality.

Our Case Study and Approach

The Project and Its Intercultural Collective

The SARS-CoV-2 pandemic hit indigenous peoples in Latin America hard by deepening historical socio-economic gaps, according to the Economic Commission for Latin America and the Caribbean (2021). In Amazonian Ecuador, young people experienced especially strong effects on access to higher education in particular (Arias-Gutierrez & Minoia, 2023; Pinto & Machoa, 2020). It is these conditions that sparked the Emergencia de Educación en la Amazonía project, a response to the urgent need to keep building representation resources (for and within ICC) to visibilize indigenous youth's marginalization as the pandemic raged. Simultaneous efforts to support the ongoing reactualization of knowledge/practice for indigenous popular education were contributing to resistance against underlying issues of structural social exclusion (Pinto et al., 2023). The project was conceptualized as a participatory intervention to bring together the efforts and strengths of multiple actors in an intercultural collective. Among the members were university students of nine Amazonian indigenous nationalities[5]; Efrén Nango and Andrés Tapia as education and communication leaders of the Confederación de Nacionalidades Indígenas de la Amazonía Ecuatoriana (Confeniae), the mother organization for the region's indigenous peoples, serving in 2020-2023; and the first author, a practicing design researcher

committed to indigenous and popular causes in Ecuador. The field-based research on which this article's discussion builds took place between November 2020 and November 2022.

This primary research was undertaken in the field by the first author as part of the intercultural collective where members undertook different roles at different times. For example, indigenous youth representatives acted as co-researchers and co-designers but also as collectors and translators of information; Efrén and Andrés also served as co-researchers while also providing connections to communitarian political, educational, and communication infrastructure. We built data through workshops, meetings, interviews conducted by indigenous youth in their respective territories, and an ethnographic field diary whereby the first author documented the embedded action research throughout the coordination processes (for the participatory design of the pictograms, finding resources, and building connections and mentoring). Text and voice message exchanges on the WhatsApp platform constitute a considerable portion of the dataset on account of the geographic distribution of participants. In the collective, the first author moved between different levels of centrality within the overall project—for example, taking roles of a graphic designer (e.g., illustrating sketches and explanations by young co-researchers) and project co-ordinator (e.g., devising design-action strategies with Confeniae leaders) helped her tackle collective needs yet also, when other co-researchers led activities, stay in touch with matters *on the ground*. The latter responsibilities entailed, for example, care and support from a position of compañera (ally) to the young co-researchers assuming their role as indigenous leaders and discussing what to represent in the territories with their communities (for more on co-researchers' activities see Pinto & Nango, in press).

Participatory Research and Collaborative Design Journey

The PD journey comprised two types of work approaches, which framed the various activities (the distribution and rhythm of which are outlined in Figure 3). Firstly, joint workshops (four so far) brought teams together in a shared space, usually for a day, to create graphic materials and visually code generative themes. These themes functioned as seeds to critical reflection on situational and personal struggles but also strengths and helped everyone involved to represent restrictive situations in need of transformation (Freire, 1971). That is, we identified actions incorporating the potential to become generators of actions. In a concrete case from the first workshop (W1), the sketches that sparked the pictogram process facilitated discussing how our motivations could intersect. Thus, the stage was set tangibly for using pictograms to make visible the indigenous people's current struggles. That workshop also identified possible techniques for reporting and design from each territory. After a year of collective work on this basis, the members convened for a second workshop (W2) to jointly assess the graphic materials produced thus far, considering the associated processes of knowledge-building and deciding upon the next steps to take with the support of indigenous bodies' leaders.

Secondly, youth co-researchers throughout the Amazon region followed work procedures developed from and in the territories (over 24 months) to continue the research and design their nationality's pictogram alongside their community. The groundwork involved using and analyzing instruments such as informal conversations (denoted as C–N = 162), interviews (I–N = 6), documentary photographs (N = 200), and audio-recorded oral descriptions (18 h of recordings) to construct a collective narrative around the question "what represents us as _____ nationality?" This work mode entailed collecting stories and other testimonies explaining participants' languages, history, knowledge, and practices in relationship with the respective territories, all from their own reality. To navigate conditions connected with the pandemic, technical restrictions, and the youth co-researchers' geographical dispersal, we drew on the distributed and virtual work mechanisms they recommended, with a solid commitment to maintaining regular (synchronous and asynchronous)

communication via messaging software (e.g., with countless WhatsApp connections) and video-conference meetings over video conference every two months (Bi-Zoom–N = 12)[6]. These links encouraged continuous dialogue focused on the graphical output and generative themes developed at the workshops, and they supported refining the visually oriented decisions in light of lessons from each territory. As the youth co-researchers, alongside their family, peers, elders, and leaders, analyzed and arranged these decisions on the pictograms, then engaged in further discussion and graphics work with the first author, the pictograms evolved, progressively improving with each new version over six iterations. Practice that kept us both acting with the territories and resonating with histories of praxis as expressed in the epistemological principle of popular education *La cabeza piensa, allí donde los pies pisan* (i.e., the head thinks where the feet step) emphasized the significance of the physical, social, and cultural contexts in which our design research and production took place (Andrada, 2020; Freire, 1971, 2005).

Figure 3. The map was developed to illustrate our way of thinking and working:
the participatory-research and collaborative-design journey.

After reaching consensus through this iterative process rich with intergenerational exchange of knowledge and experiences, we arrived at version 6.0 of the pictograms (shown in Figure 4). On the basis of the collective agreement reached at the second workshop, this output was officially presented for validation at the 2022 regional Confeniae assembly. At the assembly, young indigenous co-researchers, supported by Efrén, assessed the pictograms with the presidents of the 11 Amazonian nationalities and grassroots representatives against the backdrop of Efrén's reminder of the importance of creating *pictograms* as "representations of each nationality from our voices, and not from the state, universities, or NGOs" (Ef-C6). An assembly resolution affirmed the pictograms as appropriate self-representation (Confeniae, 2022), whereupon they were adopted as critical tools to communicate nationalities' knowledge and practices. As such, they have appeared in collective material production, such as an article written by the collective for an Amazon-region magazine on the challenging conditions faced by students amid the pandemic (Pinto et al., 2021), which included advocacy/awareness-raising infographics (see Figure 5). Also, pictograms were used in protest materials during marches against mining (Communicacion Nakian, 2022) and in a pedagogical guidebook for organized action by Amazonian women (Pinto & Martínez, 2022).

Figure 4. Validated pictograms of Ecuador's indigenous Amazonian nationalities and the outcome of our community work plus official negotiation/consultation. Quijos and Sapara pictograms are currently being developed.
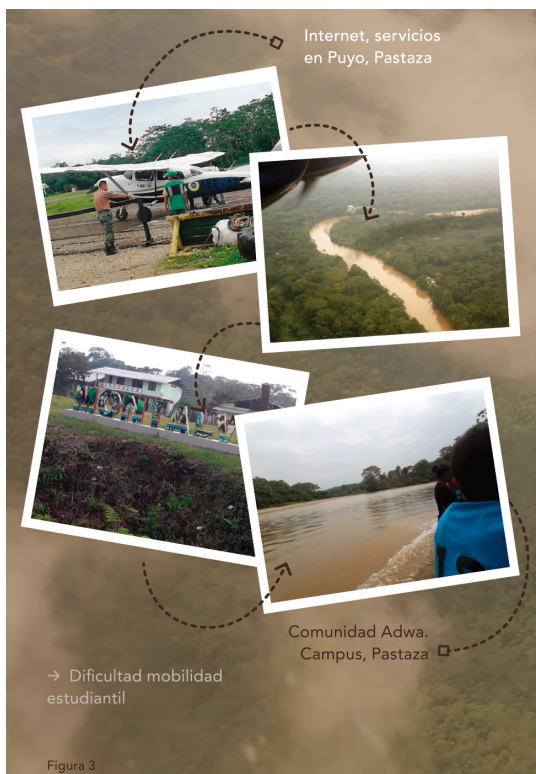

Figure 5. An Andwa-pictogram-using infographic for an Amazon-focused magazine's article conveying indigenous students' plight during the pandemic.

Pictograms as a Way of Working and as Results

"One would see [awina, or pictograms, in face-painting] and one would know," commented Kichwa elder Manolito (M-I1) when discussing the role of face paintings and their designs for his people. He called the painting designs *a kind of science* able to convey detailed information. They might identify who has a commanding voice, by placing certain figures around the mouth; signal thinking and organization skills, by means of a sun drawn on the forehead; or employ colors/materials evocative of specific indigenous nationalities. His remarks prompted the first author to start clarifying how pictograms could represent an orientation, position, and relationality to beings and specific territories. These reflections led to a decision to create a set of interdependent schematic images whose positioning within an embracing *graphic map* (see Figure 6) could allow for articulating relationships of beings, stories, and nature.

The map, structured by diagonals and dots that act as support for each nationality's pictograms, serves several purposes. Firstly, it sustains both variation and a systematic setting for each nationality and for every pictogram relative to each other. Simultaneously, it points to some of the complex relations between representations of each nationality, emphasizing *unity within diversity* as integral to the intercultural construction of identity (Confederación de Nacionalidades Indígenas del Ecuador, 2012). We focused on collecting and representing stories with graphic commonalities. For stories understandable by all involved, we focused on territorial-historical references shared across all nationalities. This led us to graphic representations of the boa, the jaguar bear, and the stars, which are strongly present in face-painting and ceramics across Ecuadorian Amazonia. They offered common ground from which to start illustrating other multi-level relations among space/territory, beings (human and non-human alike), and nature. Thus, our design process demonstrated awareness that, as Lagrou (2022) noted with regard to the visual thought processes evident in the intersemiotics of Brazil and Peru's Huni Kuin indigenous patterns, one should see the graphical outcome as "not about marking off internal differences, but, to the contrary, meant to show the multiple relations and iterations that compose any single being" (p. 50).

For the human figures and the elements representative of each nationality, the discussion at W1 emphasized the richness of detail in the patterns, color choices, and arrangements and materials for garments, face-painting, earrings, collars, and crowns. It emerged as highly relevant to create ample space for these intricacies' vibrant manifestation. Siekopai co-researcher Esperanza was adamant that their positioning was crucial—"the most important element in the drawings should be the facial paintings. Each has its own meanings [...]. [C]lothes are also important! They differentiate us from other nationalities; for example, we Siekopai are considered multicolor people" (Es–W1). Likewise, Manolito reiterated for all present at his interview that "each nationality has their own paintings, but they are according to the territory and importantly what it is in there" (M–I1). To address these vital but not necessarily central questions, human figures were framed to the sides of the diagonals and proportioned to be bigger than other elements yet not shown in isolation. This allowed the meanings of designs in face-painting and attire to occupy space, using scale to add detail while presenting the human figure in relationship to non-human elements.

In the course of conversations and interviews after W1, other representative elements evoking relationality—linked to history and territory, rituals and medicine, food sovereignty, flora and fauna, and warriors' knowledge—prompted us to further layers and references in the image sets' forms. In one illustrative case (captured in Figure 7), Siona co-researcher Sabina highlighted the wooden lance used by the Indigenous Guard[7]: this spear "is an extremely important [element] since the guards are monitoring our territory, not to be invaded by settlers or others. They go to the paths and clean the limits of our territories with it, so that we do not lose more land […]. The same way the police have batons, our guards have spears made of chontaduro tree" (S-C4). Sabina connected the spear to information her grandfather had shared (S-C1) about the history of her people, who had once been represented by the Putumayo River. The river now stands for the late-nineteenth-century displacement of Siona people in the wake of the rubber boom and with the slave trade having carved out the modern Ecuador–Colombia border. It also represents the current Siona struggles to protect the land and water from extractive industries.
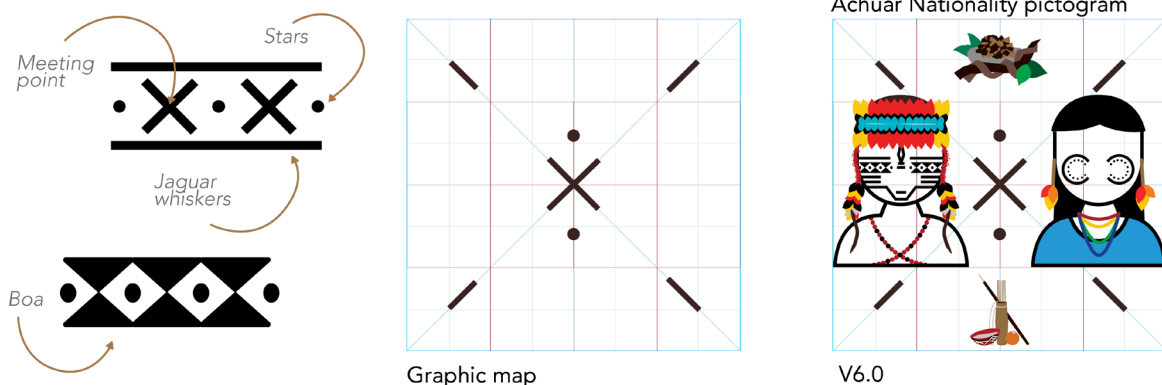

Figure 6. Structure for a graphic map sustaining nationalities pictograms, designed with elements prominent in Amazonian graphisms.

Sensitive to the fact, important here, that each indigenous nationality confers its own name on image systems, we followed historical ICC strategic practices of collectively appropriating the *pictograma* notion to facilitate dialogue between nationalities and across realities. Also, we acknowledge that language carries agency to form images that may or may not correspond to the actuality of a community's struggles and experiences through its history (Wa Ngugi, 2015). We were cautious about how the design process further sustained each nationality's language(s), taking care to prioritise naming graphic elements and gathering data in the original language, with translation into Spanish where necessary for facilitating intercultural communication, albeit problematically. The *extended version* of each pictogram (see Figure 8 for an example) reflects this strategy.

Discussion

Pictograms, Popular Education, and Communication

The pictogram-making process relied on extended periods in which the young indigenous co-designers and co-researchers worked with the graphic materials to unfurl the fabric of generating themes (Freire, 1971, 2015). In those spans of dialogue and critique with the communities (captured in Figure 9), they reached out to other youth, their families, and leaders to reflect together on the materials but also—just as importantly—about their own history and the complexities behind the representations under exploration. With this talk and its inherent temporality, our co-designing meshed with
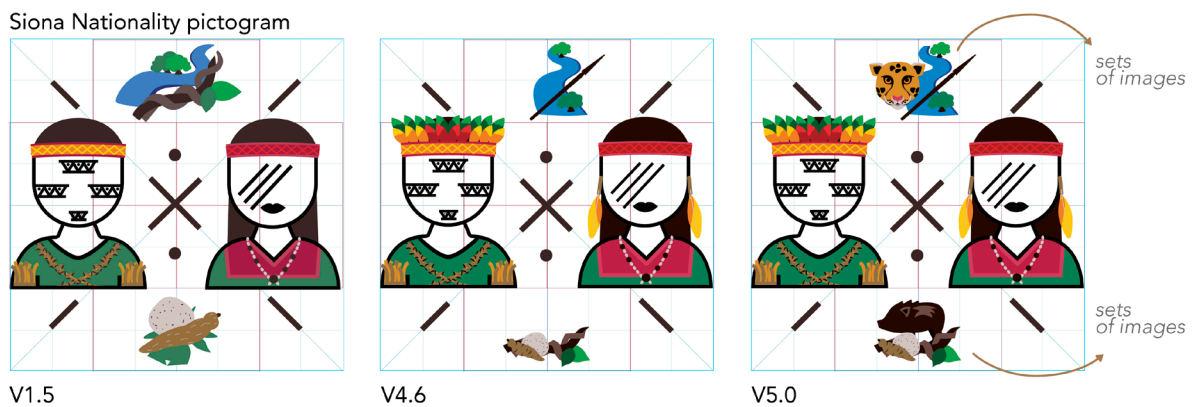

Figure 7. Evolution of the image design for the Siona nationality's pictograms, based on iterative dialogue.

Figure 8. The Waorani-pictogram poster elaborates on knowledge-carrying, history, and beings' interconnection with sustaining nature (see https://confeniae.net/quienes-somos/).

a communication tradition that has not taken written language as its central/only convention for documentation, communication, and learning; rather, collaborative working and thinking with pictograms facilitated design/learning consistent with a tradition based on speaking together around materials and aesthetic manifestations (Guamán Poma de Ayala, 1980; Rivera Cusicanqui, 2015). This particular communicational structure permeates the following extract from dialogue (S-C1) between the A'i Kofán co-researcher and A'i Kofán leader Eduardo Mendua (later killed for his land-rights work against oil-based exploitation of A'i Kofán territory):

> Eduardo: I can see the design you have done, Shakira. With regard to them, the crown, I think it does not represent us. There are many elements missing—for example, the toucan feather. What identifies us as Kofáns is the green. I think it will be important to have a tree, the ceibo, which is highly significant for us. Our wealth is important: Water! Water, which is our vital liquid.
>
> Shakira: And the ceibo tree, what does it represent?
>
> Eduardo: The ceibo is a sacred tree; it is there where our grandparents, our taitas (knowledge elders) go and transform and rest when they take yajé. It is there where our wise, most knowledgeable people rest.

Constant dialogue around materials and what to represent, how to position tangible pressing interests, and the needs/knowledge to include helped us design pictograms sustained by not *one word*—which could strictly mark subordination to dominant narratives—but multiple communitarian, collective words (Risler & Ares, 2015). These sustaining words connect to ways of doing and knowing among Ecuadorian Amazonian indigenous people, for whom speaking is more than a communication method. For Andrés, it exists within a *historical, ancestral component, a practice with a millenary trajectory as a key mechanism for vindication of powers* (2021, C2). The young co-researchers were not new to the craft of interacting, of active consulting and leading processes that promote community members' participation at multiple levels. Neither were they unfamiliar with the importance of giving a voice to the space inhabited. In this, co-researchers connected the many members of their nationality through complex representations of knowledge and memory sustained in a relational weave with threads of territory and people.

Through this practice, images operated as cognitive aids, supporting collective navigation through a multi-dimension world and the Amazon's multiple realities. The still-evolving

pictograms help all involved illustrate and arrange representative elements to project indigenous nationalities' past and future through fundamentally social practical reactualization of knowledge grounded in many distinct yet shared experiences, all articulated through common struggles extending back through time (Magallanes Blanco, 2020; Suzina, 2021).

Pictograms, Participatory Design, and Communitarianism

Our approach to documentation, communication, and learning for the research and design process reflects communitarianism, a particular way of doing and knowing wherein indigenous nationalities understand territory as a social being. Each—oral and visual—discussion between a co-researcher and other community members about what represents the nationality expressed and shared a particular experience. For said knowledge to flow further, the co-researchers captured the audio of those exchanges, annotated this with voice notes, then shared these with the design researcher via WhatsApp messaging. This three-stage structure to the cycle of asynchronous conversation among co-researcher, community member(s), and design researcher entailed permanent collective transiting between image and sound, combined with constant translation between the languages (and realities) that accompany each of us. This travel and layering are illustrated nicely by a conversation, after W1, in which Andwa participant Nina discusses her boa face-painting and co-researcher Royer contextualizes this for the first author, responsible for producing 'sharper versions' in each pictogram iteration:

> 1: Nina (in a contemporaneous audio note recorded by Royer): We [women] identify ourselves when we represent the ceramic goddess of abundance and harvest [when making ceramics].
>
> Royer (supplying context): Manga Allpa, the goddess of pottery, made *maajis* (women) dream. In this dream, she took clay from the women's bellies to make clay objects. She then extracted a tear from the shillquilla, a crucial tree in our *nakua* (mountain-jungle), using it as varnish for the mocawa (ceramic pot) [...]. Since then, women have excelled at clay craftsmanship, passing down their practices to other nationalities.
>
> 2: Nina, continuing (in Royer's contemporaneous audio notes): We women-boas [in] our *wituk* (pigment) face-painting bear her [the goddess], immediately identifying our beauty.

Figure 9. Co-researchers Royer, Yankuam, Sabina, and Shakira work in the Andwa, Shuar, Siona, and A'i Kofán territories.

Royer (in another contextualizing note recorded later for the first author): The kwajaker–boa–mother goddess represents productivity, harmony with the environment, strength of the spirit, and the value of nature.

To ensure accurate representation beyond a male perspective, Royer engaged his friend Nina in collaboration to refine the initial sketches for the Andwa pictogram material. Through the process exemplified in Figure 10, these sketches grew, as did surrounding conversation, which built collective knowledge and skills in communicating meaning. Constant multi-level consultation of this sort redistributed knowledge as information-gathering progressed. The communitarian process embedded the pictogram elements and system in a relational web of community members and their territory.

The young co-researchers and design researcher tuned the identification and representation of the knowledge and practices via new versions of the pictograms. While traditional PD terminology might encapsulate this within the *democratization of the design process*, its tendrils escape that box here: the tuning also continuously activates connection to common struggles. In fact, the distributed participatory process initiated organically by the co-researchers was both enabled and sustained by a history of communitarian production modes whereby the design research flowed into commitment to collectivity (Pinto et al., 2022). Constructing pictograms interacted with actions, constructing resistance, territorial defense, education, and autonomy. This process focused on identity, not in generic images expressed in defined, static symbols but in a system anchored in day-to-day life. Hence, it might readily diverge from how symbols get devised in capitalist settings, not least because of the pictograms' inherent political dimension being underpinned by organic connection to diverse members of nationalities and territories[8]. These design outputs were no branding or logo; they were flexible, adaptable devices for thinking, working, and resisting.

Designing in a communitarian way also demanded constant critical attention to academic privilege, biases, or influences within the intercultural collective. For example, the first author wrote in her diary: *When speaking with [Shiwar co-researcher] Esteban about presenting the pictograms at the assembly, I notice*

he induces terms from formal texts we'd looked at together (e.g., reports or articles) or my academic discourse. For instance, he uses the concept of structural marginalization (N-FD09.2022). In a series of exchanges following on from this, we problematized *speaking as academics* and reflected on how indigenous youth connect *structural marginalization* with lived reality. Though time-consuming, committing to tensions as an action space within the research process helped us manage dominant dynamics and reinforce, rather than dilute, heterogeneity in our ways of thinking and designing (Pinto et al., 2023).

Pictograms as Complex Knowledge Systems and Intercultural Strategy

Finally, pictograms served their users, on one level, analogously to the Ecuadorian indigenous movement's *indigenous identities* notion: as a strategic intercultural instrument of representation whereby knowledge, practices, and struggles may be mobilized to permeate the dominant side (Confederación de Nacionalidades Indígenas del Ecuador, 1994, 2012; López, 2009). Working and thinking with pictograms from this angle requires acknowledging where they do vs. do not work as intercultural devices. Pictograms have limitations. For instance, full understanding of each nationality pictogram, with its richness of elements, is possible only for the nationality's members. Therefore, the pictograms might make more sense for general audiences when presented as infographic elements that add context and a story.

Although we draw on commonalities to Amazonian nationalities' struggles and identities, these are profoundly plural-cultural too. The indigenous world (and the research to some extent) requires embracing a diversity and richness of knowledge that cannot always be fully conveyed in the pictograms we designed. At the same time, we purposely and carefully didn't convey *everything* that has been part of discussions and reflections: re-actualized knowledges, traditions, particularities of territories, or struggle strategies that could be co-opted or that simply constitute *private* knowledge internal to the nationalities. The current versions of the pictograms prioritize nationality's unique histories; they do not, and cannot, present the complete

Andwa Nationality pictogram

V1.0 *Royer's first pictogram sketches*

V3.0 *maají/women*

Nina sharing photo, texts, audios through Royer

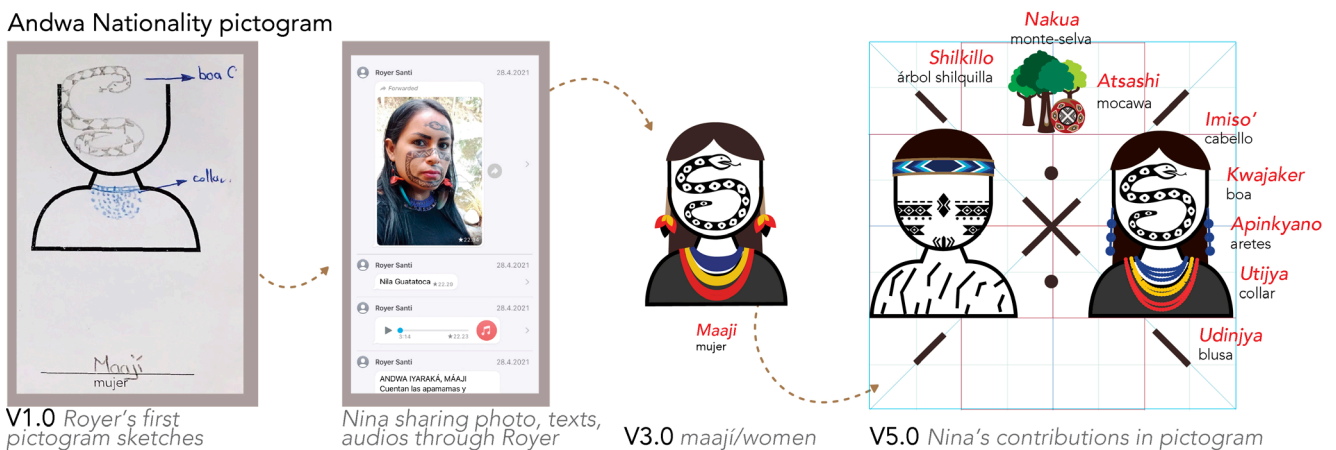V5.0 *Nina's contributions in pictogram*

Figure 10. Andwa pictograms' iteration via exchanges between Royer, his young collaborating friend, and the first author.

fabric of images constituting a language or all layers and intersections understood by those who are part of the territory. We had to find balance: for the co-researchers and communities, the pictograms are not abstractions—these deeply meaningful tools demand detail if they are to communicate accurately, yet sufficient *understandability* for a wider audience requires compromising on specificity. This negotiation greatly benefited from the lived experiences of the youth co-researchers, who navigate between multiple worlds, notably that of their nationality and that of an intercultural university (For a summary of Discussion, see Table 1).

Conclusion

Motivated by pandemic-related impacts on university education, the collective set out to raise awareness of the education emergency facing this vulnerable region and contribute to the strivings by Amazonian Ecuador's indigenous nationalities for a dignified, fair, and intercultural education. The pictograms were a result of a process of PD aimed at better visibility of each indigenous nationality's situation, with the resulting images serving as identity-building devices in their own right for the respective nationalities while also communicating across, between, and beyond them. Rather than sit as passive symbols, these pictograms, then, acted as locations where new representations emerged.

Thus, the PD process formed pictograms while functioning in itself to form a discourse space for exploring social and political conditions for confronting dominant structures. Working with pictograms as images to think with helped us understand and configure together the current complex social reality of indigenous nationalities. This process accessed multidimensional stories oriented toward community needs rather than a single member's narrative, reactualizing the complex knowledge of indigenous nationalities from their own perspective. Accumulated knowledge and practices derived from the design process supported popular indigenous communities' autonomous development. Whereas customary PD tends to manage the knowledge-accumulation process privately (corporate) or institutionally (government/ academic), the redistribution of participation in ICC processes expands the understanding of participation in design research/

production. Communities expand their own abilities to decide for themselves in light of the democratic objectives, policies, etc. discussed and chosen together while unshrouding the legacy of dominance structures. The pictogram is itself politicised, while its participatory, distributed design too is a politicizing process.

The research purposely utilized a set of woven and self-managed experiences, following an autonomy-sensitive collectivist tradition. Tapias's background with communication leadership in the Ecuadorian Amazon highlighted the value of such practices in nurturing the communitarian and political dimensions of ICC production–reproduction (Muniz & Tapia, 2021). Following this tradition helped raise a profound shared understanding of how collective reflection-action with distributed participation can potentialize relational individual-communal agency. In other words, taking part in PD of this nature transcends individuals and their self-empowerment: it promotes shared understandings and practices of collectivity. Those involved activate and mobilize their skills and potentialities through discussing, making, and doing. Meanwhile, the community as a whole consolidates and strengthens.

Through its products and its processes of deriving them, the PD for pictograms constructed and sustained support for reactualizing indigenous people's own languages, history, knowledge, and practices. At the same time, rendering their symbolism readable outside the indigenous cultures need not imply any slippage toward universalism, as celebrated in more Eurocentric understandings of pictograms. Indeed, it becomes an active contraposition to homogenization. Processes that reconnect with the resistance traditions of organized indigenous communities on several levels seemed to be at the core of avoiding dilution of indigenous worlds.

Finally, in the process of thinking and doing with pictograms, participation in the design process is not just an instrument of inclusion but an approach/method that problematises it. It spotlights issues of who should be involved and what to include or share. Close alignment with ICC affords reappropriating and reactualising the concepts closest to indigenous communities on their own terms, and it unlocks understanding by the diverse worlds in which they stand in dialogue.

Table 1. Ways in which working and thinking with images contribute to politicizing the pictogram.

Key concept/practice from ICC framework	Intertwined processes	Transformation
Popular education and communication	Pictograms, popular education, and communication: - Iterative dialogue and critique, sustaining the representations' complexities. - Giving voice to diverse community members.	Pictograms are mobilised not as standardisation tools but as evolving learning/communication devices.
Indigenous communitarianism	Pictograms, participatory design, and communitarianism: - Involving the territory's and its people's experiences through distributed participation. - Constant critical examination of academic privilege, biases, and influences.	Democratisation of the design process transitions into distributed design research, connecting and learning from historical and current struggles.
Interculturality	Pictograms as complex knowledge systems and intercultural strategy: - Acknowledging the multiple dimensions on which representations do and do not work. - Taking care not to convey information that could be co-opted.	Representations of subaltern identities as a strategic intercultural instrument.

Acknowledgements

Endnotes

1. The concept of South or Global South is approached here in the manner of many other Latin American designers who think and do from the South(s), as a metaphor for the human suffering caused by capitalism and colonialism on a global level, as well as for the resistance to overcome or minimize such suffering […], an anti-capitalist, anti-colonial, anti-patriarchal and anti-imperialist South […] that also exists in the geographic North (De Sousa Santos, 2016, also cited by Reynolds-Cuéllar et al., 2022).

2. We take nationality, a notion that is itself problematic, as a concept applied to the constitutional principle or for praxis wherein indigenous peoples with their worldviews, languages, and social structures for health, education, political governance, and administration of justice support and align closely with a given territory or territoriality. The word, as used in this context, does not connote the existence of multiple nations within a country but highlights recognizing the coexistence of various ways of inhabiting the same nation-state (see Pinto & Martínez, 2022).

3. *Mestizos* are the fruit of the mixing of Europeans and local indigenous inhabitants upon Latin America's colonization by Europeans. *Mestizo* culture embodies a complex syncretization of indigenous knowledge, traditions, and practices with elements of European influences.

4. All quotations from project participants and other non-English source materials are the authors' careful, cross-checked translations from the original language.

5. The indigenous youth co-researchers, each representing an Amazonian indigenous nationality involved in the project, are Esperanza Piaguaje (Siekopai), Sabina Guerrero (Siona), Shakira Yumbo (A'i Kofán), Esteban Timias (Shiwar), Jeaneth Mashian (Achuar), Royer Santi (Andwa), Nicxon Nihua (Waorani), Yankuam Wampash (Shuar), and Liz Tánguila (Kichwa).

6. The region covered is vast and displays significant infrastructure disparities (e.g., related to Internet connections and their costs), so we introduced a monthly stipend to establish similar technical conditions for the collection and sharing of data by all the youth representatives, alongside fulfilment of their responsibilities as students in the virtual-education context connected with the pandemic.

7. The Indigenous Guard or Community Guard are the people, commonly young members of the community, who are in charge of guaranteeing security in decision-making spaces and within each territory more generally. The guard enforces internal collective norms and maintains harmony, taking action when unfolding circumstances run counter to the community's will. These people are also often charged with enforcing the territory-level collective will in the face of external threats and providing protection (e.g., by carrying out reconnaissance tours and countering invasions).

8. The reflection on identity developed here was inspired by conversations with Camila Martinez, a popular educator in marginalized neighborhoods of Guayaquil, Ecuador.

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