



# Educational Experiential Calendars: Creating Links Between Indigenous Communities and High School

*Tuija Veintie, Anders Sirén, and Paola Minoia*

## INTRODUCTION

In Ecuador, within the framework of intercultural bilingual education (IBE), it is argued that one of the factors creating conflict between the Indigenous population and the national school education system is the imposition of inappropriate schedules and calendars. Therefore, the ministerial agreement that officially instigated the IBE model in 1993

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T. Veintie (✉)

Helsinki Institute of Sustainability Science, Department of Forest Sciences,  
University of Helsinki, Helsinki, Finland

e-mail: [tuija.veintie@helsinki.fi](mailto:tuija.veintie@helsinki.fi)

A. Sirén

Amawtay Wasi University, Quito, Ecuador

e-mail: [anders.siren@uaw.edu.ec](mailto:anders.siren@uaw.edu.ec)

P. Minoia

Cultures, Politics and Society, University of Turin, Turin, Italy

e-mail: [paola.minoia@unito.it](mailto:paola.minoia@unito.it)

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stipulates that in IBE establishments a social calendar and a class schedule are established according to the socio-cultural and economic situation of the communities of the highlands, the coast and the Amazon (Ministry of Education and Culture 1993). The clash between calendars has long roots in the colonial history of the Latin American continent.

In much of Latin America, including the territories now known as Ecuador, the Gregorian calendar was adopted in 1584 by order of King Philip II of Spain (Ortiz Garcia 2012). The Gregorian calendar, named in honor of Pope Gregory XIII in 1582, is the most widely used calendar in the world today (Gutiérrez 2008). However, the standardized Gregorian calendar is just one way of organizing units of time, while various cultures have developed systems to mark and organize time based on their own interests and needs (Davenport 2007). In Latin America, the Maya, Mexica (Aztec) and Inca are known to have developed systems of measuring and organizing time based on their rigorous observation of natural phenomena and vast knowledge in the fields of mathematics and astronomy. The Inca, with greater transcendence to the contemporary Andean Indigenous cultures, developed an intimate relationship between agricultural and religious ceremonies with the stars, especially the sun, and elaborated an agricultural and festive calendar based on their astronomical knowledge (Ortiz Garcia 2012).

Although contemporary Latin American society currently uses the Gregorian calendar, there is interest among Indigenous peoples and nationalities in calendars based on the worldviews and experiences of Indigenous communities. This interest is notable within bilingual intercultural education. Paz y esperanza (2012), for example, describe an experience in Andahuaylas, Peruvian highlands, where several schools, teachers, students, parents and wise community members were involved in producing an Andean agro-festive and ritual calendar to better align school activities with the organization of local Indigenous time and space. They affirm that the latest generations no longer practice or know the Andean calendar and its strong link with the sun, the moon and the stars. Therefore, it is necessary to involve parents and wise men and women in the process of elaborating the calendar (Paz y esperanza 2012).

Similarly, based on experiences of intercultural education in Chiapas, Mexico, Sartorello (2016) highlights that a socio-natural calendar of activities should be developed in each school with teachers, students and community members, as it is an important pedagogical tool that manifests the intimate relationship between society and nature. It is worth noting

that such relationality, important among the peoples of Chiapas, is one of the fundamental epistemic characteristics in the thinking of many Indigenous peoples and nationalities of the Americas (Battiste and Henderson 2000; Reascos 2009).

Moreover, relationality goes beyond human beings and nature. For example, according to studies in Ecuador, the intimate relationship between the world of human beings and the spiritual world below and above is fundamental in the thinking of the Kichwa and Shuar of the Amazon (Andy Alvarado et al. 2012; Chiriap Tsenkush et al. 2012). Therefore, it is important to include the spiritual aspect within the system for organizing time. Additionally, in the holistic and relational ontology of the Kichwa and Shuar peoples, time and space tend to be conceptualized in a circular or spiral form (Chacón 2012; Cornejo 1993; Pari Rodriguez 2009; Yañez 2009), in contrast to the linear conceptualization of time that dominates thinking in Christian religion, historiography, and sciences (Marcus 1961; Santos 2004; Yañez 2009).

Consequently, community calendars promote ontological and epistemological pluralism: the possibility of thinking from another perspective and conceptualizing time, space and the relationships between the beings that cohabit the cosmos. In this way, it is possible to challenge onto-epistemological hegemonies and promote an interculturality that understands epistemological diversity (Walsh 2012; Quintriqueo et al. 2019).

### *Community Educational Experiential Calendars: The Case of Pastaza*

Although within the IBE in Ecuador, the socio-cultural calendar was introduced in the early 1990s, it has not always been a high priority in the country's IBE policy. For example, the 2010 update of the model of the intercultural bilingual education system (MOSEIB) does not emphasize calendars and schedules. However, the 2013 update reinstates the idea of the social calendar according to local needs, mentioning a community educational calendar, as well as an experiential calendar of the nationalities, and also an agro-ecological and festive calendar (MinEduc 2010, 2013). More recently, as part of the process of relaunching the IBE, the Ministry of Education published a set of guidelines for the implementation of MOSEIB (hereinafter referred to as "the guidelines") (MinEduc 2017). The guidelines highlight that each intercultural bilingual community education center (CECIB) and intercultural bilingual community

education unit (UECIB) should organize their respective community educational experiential calendar (hereinafter referred to as “calendar”). This calendar is seen as an essential element in supporting students to maintain the link between their cultural experiences and formal schooling (MinEduc 2017, p. 14).

According to the guidelines, the development of the calendar plays a fundamental role in identifying and revitalizing the knowledge and wisdom of each nationality or people, generating proximity between the educational community and the local culture and context, and incorporating original content from the local socio-cultural environment into the process of teaching and learning (MinEduc 2017). Therefore, the calendar is seen as a pedagogical tool that helps to generate culturally relevant learnings from the epistemic relationality and the different activities carried out by the inhabitants of an Indigenous community in each season of the year in their territory (Sartorello 2016).

The development of the calendar is also the first phase in the development of knowledge cards, pedagogical materials written in the language of the nationality and in Spanish, with explanations about the essential elements of the experiences indicated in the calendar (MinEduc 2017). Based on the calendar developed by CECIB or UECIB and the National Intercultural Bilingual Curriculum, each educational institute must also develop institutional curricular planning, a document that reflects the institution’s educational aims and objectives, and guides the teaching and learning processes (MinEduc 2017, p. 18).

The objective of this chapter is to examine the local and Indigenous content in the calendars developed in intercultural bilingual schools in the province of Pastaza in the Ecuadorian Amazon. Since the calendars were in the process of preparation at the time of collecting the data for this study, we find it useful to also examine the calendar development process. The first results section will therefore examine the elements of the calendars developed and consider how they represent the epistemology, and the ecological and cultural knowledge of the Amazonian nationalities. The second results section will focus on the strengths and challenges in the process of developing and using the calendars.

## METHODS AND MATERIALS

This qualitative study focused on intercultural bilingual schools in the province of Pastaza. We sought information from the offices of the two education districts of the province of Pastaza, as well as from the IBE provincial technical team, to identify schools that have made progress with the elaboration of the calendars. We conducted interviews about the calendars in nine IBE centers (Table 7.1). We did not cover community education centers that provide elementary schooling, but we focused on schools that provide elementary, middle and high-school level education. Based on the information from the provincial and district education offices, as well as the data collection in the schools, most of the schools in Pastaza had not developed a calendar at the time of the data collection.

In three of the Educational Units (EUs) visited (EU7, EU1 and EU3) the teachers had developed a draft calendar that we observed. One of these (EU1) is a handwritten first draft drawn up by two teachers, while

**Table 7.1** Calendars in intercultural bilingual educational centers

<i>Code</i>	<i>Name of the educational unit</i>	<i>Parish</i>	<i>Majority Indigenous nationality</i>	<i>Unified general high-school program (BGU)</i>	<i>Interviewees</i>	<i>Status of the calendar</i>
EU1	Canelos	Canelos	Kichwa	Sciences	E1, E2, E3	Draft
EU2	Camilo Huatatoca	Santa Clara	Kichwa	Sciences and Technical	E4, E5	In development
EU3	Gabriel López	Arajuno	Kichwa	Sciences	E6, E7	Draft
EU4	Palati	Curaray	Kichwa	Sciences	E8	In development
EU5	Monte Sinai	Curaray	Kichwa	Sciences	E9	In development
EU6	Kumay	Simón Bolívar	Shuar	Sciences	E10, E11, E12	No
EU7	Amawta Ñanpi	Puyo	Kichwa	Sciences and Technical	E13, E14	Draft
EU8	San Jacinto	Madre Tierra	Kichwa	Technical	E15, E16, E17	In development
EU9	Sarayaku	Sarayaku	Kichwa	Technical	E18, E19	No

two (EU7 and EU3) are more advanced and were elaborated over a longer time with several actors involved. In each case, we interviewed at least the school principal and one or two teachers who had been actively involved in the process of developing the calendar. In the interviews, the teachers explained each element of the calendar in detail.

In four schools (EU2, EU5, EU4 and EU8) we conducted interviews with school representatives who reported on the development of the calendar, but for various reasons they could not show us any drafts. In two of the schools (EU6 and EU9) the development of the calendar was not in the planning stage at the time of the interviews, but the principals and teachers at these schools shared their reflections on the calendars. Therefore, we first analyze the elements of the calendars or drafts already developed, and then we focus on the process of development. Knowledge cards are not included in this study because at this stage none of the schools had developed them.

## RESULTS

### *Elements of the Calendars*

According to the Ministry of Education guidelines, the calendar is designed as a circle divided into 12 sectors. Each sector of the circle represents one month, with the months following each other counterclockwise (Fig. 7.1). In addition, the circle is divided from center to circumference into different sections, representing different aspects, such as seasons, productive and economic activities, socio-cultural experiences, spiritual practices, signs of nature and educational activities (MinEduc 2017, annex 7).

The calendars we observed in schools were designed in the form of a circle or a spider's web. In one school (EU1) we observed an initial draft, produced by two teachers, which focused on the activities of the education center itself, and on national holidays. At this stage of development, the calendar contains few references to the cycles of nature and agriculture and production in the community. In two schools (EU3 and EU7) we observed advanced drafts, developed by a larger number of teachers. These drafts include various aspects of the community's life cycles, in accordance with the ministry's guidelines. However, the sectors of the calendar were filled mainly with words, not with pictures as in the example



Fig. 7.1 Model of a community educational experiential calendar (Source MinEduc 2017, annex 7)

in Fig. 7.1. Next, we observe the content of the different parts of the calendars.

### *Months of the Year*

In two calendars (EU7 and EU1) the months of the year go in a counterclockwise direction, while in one (EU3) they go clockwise. In all three calendars the names of the months are included both in Spanish and Kichwa. Different variants of the Kichwa language are used in the calendars, so that one of the calendars (EU3) applies the local variant of Kichwa, while two calendars (EU7 and EU1) use unified Kichwa, the standardized version of the language. The differences between unified

Kichwa and local variants are notable. For instance, January is *kulla* in unified Kichwa and *puyu* in the local variant. October in unified Kichwa is *wayru* and *ukuy* in the local variant. *Puyu* means cloud, and January is cloudy and rainy in the Amazon region (E7), while *ukuy* are edible ants that abound in Pastaza in October (E7 and E3). That is, for a Kichwa person from Pastaza, the names of the months in the local variant of Kichwa reflect local experiences, while the names in unified Kichwa have no other meaning than the foreign name of the month. However, in colloquial speech we observed that Kichwa speakers tend to use the Spanish names of the month rather than the names in local or unified Kichwa.

One of the interviewees (E3) acknowledged that unified Kichwa has its origin in the highlands and is foreign to the Amazonians. He stated that his reason for incorporating unified Kichwa into the calendar is that students must learn the names of the months in both unified Kichwa and the local variant of Kichwa.

### *Productive and Economic Activities*

One of the calendars (EU3) includes a section called agricultural activities, which indicates the times of planting, maturation and harvest of cassava, corn, chonta, peanuts and various fruits. Evidently this part of the calendar reflects important productive activities in the communities. However, due to their location very close to the equatorial line, seasonal changes in the communities in question are not always very marked, and thus many agricultural and productive activities are carried out throughout the year.

In one of the schools (EU7), the calendar contains a section for productive and economic activities, which represent activities that are carried out within the education center itself, such as planting bromeliads or a project to make hammocks. These activities, carried out at the school, do not follow the agricultural or productive cycle of the communities. Nevertheless, the bromeliads, native to the Americas, are part of the Amazonian biodiversity, just as hammocks are part of local life in the Amazon.

### *Socio-Cultural Experiences*

In the calendars, the section for socio-cultural experiences includes national holidays, such as the carnival or “water games” in February (EU1 and EU3), or the Day of the Dead in November (EU7, EU1 and EU3), as well as local celebrations such as the parish festival (EU1) or the Indigenous Organizations festival (EU3). These are popular festivals celebrated in the communities with their particular local features. One of the calendars (EU3) also incorporates the celebration of the family festival, when students and their parents come to school to sell their crafts: baskets, bags, necklaces and earrings. The family craft festival is organized at the school to meet the Ministry of Education requirement to hold a school projects fair.

An interesting feature of one of the calendars (EU1) is the inclusion of the *kapak raymi*, *kulla raymi*, *inti raymi* and *pawkar raymi* festivals. These are four annual festivals relevant to the Andean calendar, which represent the Andean worldview and are widely celebrated among the peoples and nationalities of the highlands, but they have not been part of the tradition of the peoples and nationalities of the Amazon. That is, Amazonian communities have not organized festivities on these dates. Several teachers we interviewed acknowledged that these traditions come from the highlands, but that at school they have celebrated one or another of these festivals at least once (E15, E2, E3 and E8).

Another calendar (EU7) includes many socio-cultural experience activities in particular during the year celebrating languages, dances, crafts, songs, legends of the peoples and nationalities, and *mingas*. *Mingas* are communal work with the families, while in some of the other socio-cultural activities indicated in the calendar, community participation is not so prominent. The activities are not part of the life of the community, but are cultural events organized by the school for its students.

This raises the question of what socio-cultural experience means. According to Huallpa and Surco (2015, p. 65), experiencing local knowledge is understood as the direct participation of the teacher and the students in an agro-festive or ritual activity at a real moment in time, not as the theatricalization or dramatization of the community life in the school. In the case of the celebration of the Andean annual festivals, these festivals are not part of the cultural experience of the local communities in the Amazon, but a recent cultural loan from the Andean Indigenous culture. The cultural events organized by this school (EU7), according to

Huallpa and Surco (2015), are dramatizations rather than experiences of Indigenous socio-cultural realities.

### *Spiritual Practices*

Frequently, the Christian religion, whether Catholic or Evangelical, is an integral part of the experiences of Indigenous communities. This was made particularly evident in one of the calendars (EU3), where everything that has been incorporated into spiritual practices is related to the Catholic religion, in the form of baptism, confirmation, Holy Week, Christmas and other feasts of the ecclesiastical year. In this case the calendar makes no reference to spiritual practices that originate from the Kichwa spirituality or other Amazonian nationalities.

Another calendar (EU7), in contrast, does not refer to the Christian religion in its spiritual practices section, but mentions *guayusa* for every month. Guayusa (lat. *Ilex guayusa*) is a tree from the Ecuadorian Amazon rainforest, the leaves of which are used to prepare an infusion. In the Amazonian Indigenous communities, especially among the Kichwa and Achuar, the *guayusa* infusion is traditionally prepared in the early morning, and the family gathers to drink the *guayusa*, discuss, share what they have dreamed, plan the day's activities, and purify and energize themselves ritually. The *guayusa upina*, drinking *guayusa*, is a daily custom that creates an environment for learning and knowledge transmission between generations, since on these occasions the elders relate stories and legends, talk about their ancestors, discuss current affairs and give advice to the young (Dueñas et al. 2016).

Based on our observations and interviews conducted in several communities in Pastaza, it seems evident that at present the *guayusa upina* is not widely practiced among families. However, we know that the *guayusa upina* is practiced in a communitarian way on different occasions, in communities and Indigenous organizations, as well as in educational establishments such as the Amazonian State University and some schools. In one of the schools (EU7), the *guayusa upina* is done once a month among the school's educational community.

In this school, once a year, the *guayusa* is connected to the reading festival, with cultural celebrations referring to literature, legends and theater. In this month, the image of a waterfall is incorporated into the calendar, with the explanation that it represents the spirit of the waterfall. This shows that in this school, where most of the students belong to the

Kichwa nationality, they also celebrate the spirit of the waterfall, which is part of the Shuar spirituality. In other words, the school recognizes that the presence of various nationalities and different spiritualities is part of the cultural reality in this school, as in several other schools.

### *Signs of Nature*

In the calendars we observed, the sections for the signs of nature have different features. In one of the calendars (EU7) many of the fields that correspond to “signs of nature” are empty. This school is in the city of Puyo, where students do not have the same proximity to nature as in schools located in rural areas or small urban centers.

One of the teachers interviewed in this school claimed that the few topics in the calendar’s section for signs of nature do not reflect the reality that the students live, but mainly represent the experiences of the Indigenous people who live in the rural Indigenous communities in the Amazon region.

In another school (EU3), on the other hand, the calendar indicates signs of nature that can be observed in the communities where the school’s students live. In this case, among signs of nature are included, for example, hot or rainy months, times when the water level in the rivers is high, times when aquatic turtles or certain fish lay eggs, as well as times of abundance of edible ants or meat. In yet another school (EU1) the calendar does not include information about signs of nature. However, one of the teachers confirmed that they should complete the calendar with information about the times of fruit ripening, rainy and sunny months, times when the fish come down and the time of the edible ants (E3). These signs of nature have a direct relationship with the activities in the communities, such as fishing, hunting and fruit gathering.

### *Educational Activities*

The educational activities of each school must comply with the school schedule of the Amazon region in terms of working days, exam periods and vacations. This schedule, established by the Ministry of Education, also includes dates for events such as “reading festival”, “school projects fair”, “children’s day” or “World Environment Day”. In addition, the ministry suggests that intercultural bilingual schools should include in their activities certain regional celebrations of the highlands or the

Amazon, as well as other celebrations according to local reality (Ministry of Education 2019).

An important feature within educational activities takes place in July and August when there are no classes in the school. According to the schedule from the ministry, this is the school holiday period, but within IBE schools there is a different approach. One of the teachers we interviewed explained the difference between Indigenous and non-Indigenous students during this time of the year: “For our young people there are no holidays. The mestizos go to the beach or something. We, on the other hand, move to another house, to the *purina*, to learn” (E14).

This means that in the Kichwa communities in rural areas, when school is on holiday, families usually go to the *purinas*, remote houses where they devote themselves to cultivating and harvesting (E2, E14 and E8). Families living in urban centers do not necessarily have a second house in the rural areas, which means that children and young people stay at home helping their parents in their work (E4). Therefore, in two calendars (EU1 and EU7) July and August are marked as *purina*, while in one calendar (EU2) they are marked as living together with the community. In any case, vacation time is conceptualized as a period of living and learning with the family and the community.

### *Development and Use of Calendars*

The principals and teachers in the schools where calendars had been drafted (EU7, EU1 and EU3), said that the development of the calendar is a multi-phase project requiring teacher’s time over several months or even years. In one of the schools (EU4), on the contrary, the principal mentioned that in this school they usually develop a calendar together with the teachers and parents at the beginning of every school year. Unfortunately, this year they had not developed the calendar nor had they kept the calendar from the previous year, so we were unable to observe their calendar.

We asked the interviewees about training related to the calendars and only one interviewee (E8) reported having received training on this topic in meetings organized by the education district during the school holidays. All the other interviewees claimed they had not received any training on these calendars. Consequently, in most schools, the development of the calendar is based directly on the guidelines issued by the Ministry of Education (MinEduc 2017).

### *Participation of Various Actors*

The ministry suggests involving the educational community, Indigenous leaders and other people who are knowledgeable about wisdom and local knowledge, in a research process where information is collected through interviews and observations, as well as from libraries and documents (MinEduc 2017). When observing the participation of different actors, we must consider the plurinational reality of the Ecuadorian Amazon and the cultural diversity of schools where members of the educational community, including teachers, students and their relatives, belong to different Indigenous nationalities from the Amazon and the highlands, or are of mestizo origin. This means that the development of an experiential calendar is a very complex task.

In the schools we visited, we observed a variety of ways of approaching the development of the calendar, who is involved in the process, and in what ways. In three of the schools (EU3, EU4 and EU8), the interviewees said that all teachers participate in the development of the calendar, regardless of their nationality. In two schools (EU5 and EU1), the Kichwa teachers native to the Amazon were primarily in charge, with the intention of involving other teachers later in the process. In one of the schools (EU7), the teachers were assigned to different committees by drawing lots, and one of these committees was tasked with creating the calendar. By lottery, teachers from the Amazon and the highlands ended up participating in the development of the calendar.

The involvement of parents and other community actors is a complex issue and we do not have adequate information to analyze the participation in the case of each school in detail. However, several principals and teachers interviewed reported that they have involved or plan to involve students and parents (E8, E9, E1, E7 and E15). Nevertheless, as we observed in several schools and as one of the interviewees (E8) pointed out, only some parents attend the meetings, and many do not participate. In addition, two interviewees discussed the need to consult the elders and wise people of the communities for more information on local knowledge (E15 and E7). The challenge of involving the elders of the community in the process was illustrated by one of the interviewees (E7):

We have to bring more elders from distant places. There are more elders in the communities. They have other knowledge. We have not gone there. Sometimes we work all afternoon and we have not had time to go. But it

would be good to go and talk to the elders to include more about their knowledge.

Since most of the calendars are recently drafted, this material has not yet been widely used in schools. The interviewees mention several ways to use the calendar: (1) the principal and teachers can use the calendar to plan the institutional activities of the year; (2) teachers can use the calendar to plan their courses and classes; and (3) students can use the calendar to see what activities should be carried out. Most of the interviewees said that the calendar is particularly useful in certain school subjects, namely Indigenous language and worldview. One of the interviewees said that the calendar should be used in all subjects as part of cross-curricular themes.

Throughout this study, we noticed how the calendar, and the interviews around it, helped us as outsiders to the community to get an overview of the important activities and events in the community and the school. Therefore, we assume that the calendar can serve as a valuable tool that presents the community to, for example, a new teacher or a family that has come from elsewhere to work or live in the community. However, the calendar itself does not contain detailed information about the community life and experiences, which means that it needs to be accompanied by an explanation from an informed person or knowledge cards, as suggested in the guidelines (MinEduc 2017).

In addition, some centric natural phenomena change from one year to another. For example, one of the interviewees (E13) mentioned that students can consult the calendar to find out when the full moon will be, which is an opportune moment for production. However, the phases of the moon change from one year to another, meaning that to include such detailed information, the calendar will have to be updated every year. Only one of the interviewees (E8) noted that in their school the calendar is prepared each year.

### *Critical Reflections*

The school principals told us that the Ministry of Education had sent them a document with guidelines on the preparation of the calendar. Several interviewees mentioned that the ministry document is focused on the highlands and includes a model of a calendar that represents the worldview of the highlands. Consequently, the interviewees saw a need

to modify this calendar to adapt it to the worldviews of the Amazonian peoples and nationalities and the local life and experiences. In addition, we studied the textbooks that are used in all high-school programs nationwide and observed that they mention the Andean worldview, but not that of the Amazon. Thus, we argue that it is essential to produce specific educational material for the Amazon, adapted to the local Amazonian realities.

A central motivation for developing the local calendar is the observation that “knowledge and wisdom are being lost” (E15) and that “sometimes we only come thinking about Christmas, thinking about Easter, Carnivals. That is not cultural, that is not ours” (E5). Teachers are seeing the need to rescue what is being lost, and to strengthen the link with the Indigenous community so that children and young people recognize the value of their culture (E16).

Generally, school principals and teachers did not oppose the requirement to develop a unique calendar for each school. On the contrary, several interviewees presented arguments in favor of local diversification, recognizing that although there are common features between peoples representing the same Indigenous nationality or living in the Amazon, each community has its own special characteristics. For example, each Indigenous nationality has its celebrations, but as the interviewees confirmed, at the local level each parish, community or organization has its own local festivals (E2, E4, E5 and E15). In addition, although the seasons and the agricultural cycle are similar among the communities in the Amazon, there are certain local differences, for example, in the ripening times of certain fruits and crops (E12). Moreover, the schools are located in different types of communities in terms of level of urbanization, natural environment, and the productive and economic activities that the students’ families are engaged in (EU2), which also increases the diversity of experiences.

The interviewees also presented critical observations that offer us valuable points of reflection on the calendars:

We don’t have it as a written document, but we have it, let’s say, in the mind of the people who live here. There it is established: when is the dry season, when is the rainy season, when is the time of abundance and when of scarcity... of fish, of everything. That is the calendar in the Shuar world. But as a written document, we don’t have it, but we do have that knowledge, we know. I don’t know if it’s necessary to write it down. (E10)

For example, I have never known when the year ends, it was only the time when the ceibo plants come out there. When the ceibo gives fruit again they said that it was the time of another year. (E19)

These observations question the need to develop a calendar in the form of a written or drawn document. The cultural practice of Indigenous peoples and nationalities is not to use a calendar, but to observe the signs of nature continuously, to live according to their knowledge of life cycles, and to communicate orally. In other words, the community experiential calendar is embodied in the native people of the community. Returning to the previous example of moon phases, we can ask whether it is more pertinent to mark the phases of the moon on a calendar or rather give students the task of observing the moon to define an opportune moment to sow or carry out other productive activities.

Furthermore, important events and situations occur throughout the year when conditions allow, regardless of the month. For example, during our stay at one of the schools (EU9), lessons were suspended for a day because the conditions were particularly good for fishing after a period of scarcity in the fish catch, so it was important to allow students and teachers to go fishing that day. In this case, it was not a fishing season, a condition that would occur every year at the same time, but an occasional condition. The idea of the calendar is to facilitate the connection with community life, but this example of fishing shows us that sometimes it is not a pre-established plan in a calendar, but flexibility with schedules and planning that enables the connection to be made with community life and local experiences.

Another critical point relates to the differences between high-school programs in terms of their content and connection with life cycles. The curriculum of the unified general high school (BGU) has a common core of subjects that all students must study, but some BGU programs specialize in sciences and academic education, while technical BGU programs, especially in specialties such as agricultural production, conservation and management of natural resources, have a close link to the environment and production. One of the schools visited (EU8) offers a technical program in agricultural production. Based on the curriculum of this program as well as our visit to the school, we observed that production activities are an integral part of the studies, and students are

directly involved in agricultural activities of animal breeding and cultivation of plants such as taro, cassava, corn and other crops that are typically produced in the area.

In this school (EU8) the connection between the curriculum and the life cycles of nature and agricultural production is evident, even if the experiential calendar has not been developed. Another school (EU9) offers a technical program with a specialty in conservation and management of natural resources. This school is located in a rural community without a road connection to urban areas, and almost all students inevitably have a link to productive activities in the community through their daily life. Therefore, we observe that in schools that provide technical BGU programs related to agriculture or natural resources and schools located in rural areas, the calendar may not provide as much added value in terms of learning about life cycles, compared to schools that offer BGU program in sciences or are located in or near to urban centers.

## CONCLUSION

As we reflect on the elaboration of calendars from a decolonial perspective we should also question the domination of writing over oral communication (see for example, Hereniko 2000; Mignolo 1996). Oral communication is integral to Indigenous communities, and Indigenous knowledge is embodied in the people and their practices (Gómez and Agualongo 2006). At the same time, we must understand the profound consequences of colonialism, of the domination of the Spanish language and culture and of Western knowledge in Indigenous communities. As mentioned before, the interviewees claimed that in the most recent generations the link with Indigenous wisdom and life cycles has been lost, that often there are young people belonging to Indigenous peoples and nationalities who do not speak the Indigenous language and are unaware of the knowledge, festivities and traditional productive activities of the Indigenous community. Therefore, we cannot assume that young Indigenous people embody the experiential calendar of their locality. Additionally, in the Amazonian IBE high schools, many teachers are mestizos or Indigenous people from the highlands who are not connected with the life cycles of the local community either.

Given this reality, an experiential calendar developed in the school with community involvement can serve as the missing link with the life cycles

and a source of information about the knowledge and experiences of the communities. The development of calendars can support the revitalization of the knowledge and wisdom of the nationalities and form a visualization of the important elements of Amazonian local knowledge. In this way, the development of calendars can constitute an act exercising the right of marginalized peoples to “name the world” (Freire 2005) from another epistemology. This is particularly relevant for Amazonian nationalities, who are marginalized even within the Indigenous population and, for example, are not represented in textbooks.

With their circular or spider-web shape, the calendars we have observed fit with the circular conception of time that is typical for the Indigenous nationalities of the Amazon. These calendars visually represent the life cycles of the community, including the agricultural cycle, cycles of nature, variation according to the season, and the main festivities and rituals that occur repeatedly in the community and combine with regional and national celebrations, as well as with the Ministry of Education’s requirements concerning the beginning and end of semesters, exams and national events. In this way, the calendars represent the complex reality of Indigenous communities and IBE schools, where aspects of Indigenous and colonial origin interrelate.

The visualization of this complex fabric highlights several critical points in relation to the epistemologies and wisdom of the Amazonian peoples and nationalities. For example, the fundamental influence of the Catholic religion is particularly strong in the case of one of the calendars (EU3), which only represents aspects of Christian spirituality, without mentioning Indigenous spiritualities. In another calendar (EU1) and in the interviews, we observed the influence of the Andean language and worldview in the form of the use of unified Kichwa and the celebration of the Andean festivals of *kapak raymi*, *kulla raymi*, *inti raymi* and *pawkar raymi* in schools in the Amazon region. Thus, in the calendars we can observe tensions both from European colonialism and from the expansion of Andean culture.

At the same time, we must not forget that the Amazon is a plurinational region, which leads us to ask: who forms the educational community in the case of each school? An Amazonian educational community can include students, parents and teachers who belong to different Indigenous nationalities and mestizos. In addition, some students travel long distances to get to school (Hohenthal and Minoia 2022), which is why students in one school can come from different communities.

Therefore, we argue that for the process of creating calendars, an intercultural dialog between various community actors is necessary to establish what is understood by the knowledge, spirituality, festivals and productive activities of each local community. Additionally, from the point of view of revitalizing local knowledge, it is crucial to involve the wise people, *yachak*, and other connoisseurs of local ecological and Indigenous knowledge in the process. Consequently, the creation of calendars requires rigorous work and a participatory investigative attitude.

We also suggest that the creation of the calendar could serve a pedagogical purpose if students were more involved in the process. Guided and advised by teachers, students could carry out tasks to gather information about local ecological and Indigenous knowledge, socio-cultural experiences, and spiritual practices of the community by consulting their parents, grandparents, farmers, elders and other wise people. In this way, along with teachers, the students themselves would study the embodied knowledge of their own community and learn through research. Based on previous studies, we believe that for Amazonian Indigenous students this would be a culturally relevant way to study and would support the investigative attitude that IBE aims to promote (Veintie 2018). In this case, the focus would not be on the final product, a developed calendar, but on the intergenerational pedagogical process of gathering and revitalizing knowledge and experiences of Indigenous communities.

## REFERENCES

- Andy Alvarado, P., Calapucha Andy, C., Calapucha Cerda, L., López Shiguango, H., Shiguango Calapucha, K., Tanguila Andy, A., Tanguila Andy, D. and Yasacama Aranda, C. (2012). *Sabiduría de la Cultura Kichwa de la Amazonía Ecuatoriana. Tomo II. Serie Sabiduría Amazónica*. University of Cuenca.
- Battiste, M. and Henderson, J. Y. (2000). *Protecting indigenous knowledge and heritage: A global challenge*. Purich Publishing, Ltd.
- Chacón, H. (2012). Aproximaciones a los saberes de los Amazónicos Ecuatorianos Shuar, Achuar y A'I desde sus cotidianidades. In J. C. Llorente and U. Sacona (eds), *Investigación aplicada a la educación intercultural bilingüe: Algunas reflexiones epistemológicas* (pp. 65–80). Institute of Behavioural Sciences, University of Helsinki.
- Chiriap Tsenkush, N. L., Jimbiquiti Puenchera, L., Kayap Atsut, O., Kuja Jimpikit, E. M., Mayak Chiriap, I. E., Mashinkias Anank, X. M., Mashinkias Chinkias, J. M., Mashu Nankitai, P. A., Sharup Tseremp Nuserik, G., Shiki Yankur, R. E., Timias Sando, E. M., Tsunki Yampis, I. de la N., Yampik

- Kajekai, R. E. and Yampik Kajekai, R. E. (2012). *Sabiduría de la Cultura Shuar de la Amazonía Ecuatoriana. Tomo II. Serie Sabiduría Amazónica*. University of Cuenca.
- Cornejo, D. (1993). Prologue. In E. Gómez *et al.* (eds), *Los indios y el Estado-país: Pluriculturalidad y multiétnicidad en el Ecuador* (pp. 9–20). Abya-Yala Editions.
- Davenport, M. (2007). Calendar as culture: An interdisciplinary project with an indigenous community. *Journal of Cultural Research in Art Education*, 25, 79–90. <https://bit.ly/40cAgTp>
- Dueñas, J. F., Jarrett, C., Cummins, I. and Logan-Hines, E. (2016). Amazonian Guayusa (*Ilex guayusa* Loes.): A historical and ethnobotanical overview. *Economic Botany*, 70 (1), 85–91.
- Freire, P. (2005). *Pedagogy of the oppressed*. Siglo XXI Publishers.
- Gutiérrez, S. (2008). Nuestro calendario: una medida de gran precisión. *Revista Suma*, 58, 87–92.
- Gómez, I. and Agualongo, J. (2006). La oralidad en la Unidad Educativa Intercultural Bilingüe “Tránsito Amaguaña”. In *Historias desde el aula. Educación Intercultural Bilingüe y Etnoeducación en Ecuador* (pp. 37–50). Abya-Yala Editions.
- Hereniko, V. (2000). Indigenous knowledge and academic imperialism. In R. Borofsky (ed), *Remembrance of Pacific pasts. An invitation to remake history* (pp. 78–91). University of Hawaii Press.
- Hohenthal, J. and Minoia, P. (2022). Territorial and mobility justice for indigenous youth: Accessing education in Ecuadorian Amazonia. *Mobilities*, 17 (6), 850–866.
- Huallpa, F. and Surco, S. (2015). *Propuesta pedagógica de producción de textos en lengua originaria, uso del calendario de actividades vivenciales de las niñas y niños del 3° al 6° grados de la institución educativa n°56075 de Irubamba y n° 56076 de Huarocani*. (Thesis to opt for the title of second specialty in: mention Bilingual Intercultural Education). Unit of Second Specialty of the Faculty of Education Sciences. National University of San Agustín de Arequipa. <https://bit.ly/3JnBRiq>
- Marcus, J.T. (1961). Time and the sense of history: West and East. *Comparative Studies in Society and History*, 3 (2), 123–139.
- Mignolo, W. (1996). Signs and their transmission: The question of the book in the New World. In E. Hill Boone & W. Mignolo (Eds.), *Writing Without Words: Alternative literacies in Mesoamerica & the Andes* (pp. 220–270). Duke University Press.
- MinEduc (Ministry of Education). (2010). MOSEIB. Modelo del Sistema de Educación Intercultural Bilingüe. Update 2010. Ministry of Education of Ecuador.

- MinEduc (Ministry of Education). (2013). MOSEIB. Modelo del Sistema de Educación Intercultural Bilingüe. Update 2013. Ministry of Education of Ecuador.
- MinEduc (Ministry of Education). (2017). Lineamientos Pedagógicos para la implementación del MOSEIB (Acuerdo ministerial 440–13). Ministry of Education of Ecuador.
- MinEduc (Ministry of Education). (2019). Cronograma Escolar Régimen Sierra. Año Lectivo 2019–2020. Ministry of Education of Ecuador.
- Ministry of Education and Culture. (1993). Acuerdo para oficializar el Modelo de Educación Intercultural Bilingüe y el correspondiente Currículo para la educación básica. (Official letter no. 0112.) Ministry of Education and Culture of Ecuador.
- Ortiz Garcia, E. (2012). Los incas y el Sol: métodos de observación solar y calendario incaicos. *Revista Española de Antropología Americana*, 42 (1), 127–143.
- Pari Rodriguez, A. (2009). Epistemología del conocimiento científico Andino: Yachaymanta yachay. *El Vuelo de la Luciérnaga*, 2, 46–67.
- Paz y esperanza. (2012). Calendario andino agro, festivo y ritual. Andahuaylas, Apurimac, Peru. <https://bit.ly/42ibmDO>
- Quintriqueo, S., Arias-Ortega, K. and Maheux, G. (2019). Contenidos disciplinarios del currículum escolar en el marco de un pluralismo epistemológico-intercultural en contexto indígena. In S. Quintriqueo and D. Quilaqueo (eds), *Educación e interculturalidad: Aproximación crítica y decolonial en contexto indígena* (pp. 74–92). Red Interuniversitaria de Educación e Interculturalidad (RIEDI) and Centro de Investigación en Educación en Contexto Indígena e Intercultural (CIECII). Temuco: Ediciones Universidad Católica de Temuco.
- Reascos, N. (2009). Encuentros y desencuentros entre la epistemología occidental y la epistemología de los pueblos Indígenas. *El Vuelo de la Luciérnaga*, 2, 20–45.
- Santos, B. de Sousa (2004). The World Social Forum: Toward a Counterhegemonic globalisation (part I). In J. Sen, A. Anand, A. Escobar & P. Waterman (eds), *World Social Forum: Challenging empires 2004* (pp. 235–245). The Viveka Foundation.
- Sartorello, S.C. (2016). Política, epistemología y pedagogía: el método inductivo intercultural en una escuela Tseltal de Chiapas, México. *Revista LiminaR. Estudios Sociales y Humanísticos* 14 (1), 121–143.
- Veintie, T. (2018). *Revival and regeneration of Indigenous knowledge in intercultural bilingual teacher education: A study in the Ecuadorian Amazonia*. University of Helsinki. <https://bit.ly/3YPQzoc>
- Walsh, C. (2012). “Other” knowledges, “other” critiques: Reflections on the politics and practices of philosophy and decoloniality in the “other”

America. *Transmodernity: Journal of Peripheral Cultural Production of the Luso-Hispanic World*, 1 (3), 11–27.

Yañez, F. (2009). Construcción del saber matemático y mediación sociocultural. *El vuelo de la Luciérnaga*, 2, 68–93.

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