Chapter 7

Indigenous languages in higher education: Case studies from the Amazon of Peru

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This study examines the role of two indigenous languages in higher education in the Amazon of Peru. It looks at efforts to implement Kukama and Kichwa as key components in the teacher training model developed by the Programa de Formación de Maestros Bilingües de la Amazonía Peruana (henceforth FORMABIAP for its initials in Spanish). At present, Kukama and Kichwa are at different points of UNESCO's endangerment scale. Teaching them in higher education is part of a more comprehensive commitment to build culturally and linguistically appropriate education for Amazonian indigenous groups. This chapter documents several components of the FORMABIAP project. We look at a sample of eight FORMABIAP's alumni, five Kukamas and three Kichwas, to investigate and reflect on the overall outcomes of their learning process. In addition, we survey the profiles of the instructors, the structure of the language classes, and their communities of practice. An important finding of this study is that endangered languages can be relearned by heritage speakers in a combination of naturalistic and well-structured instructional settings. We conclude that the assessment of these relearning processes needs to be holistic, going far beyond linguistic proficiency. In the Amazonian context, at the center of it all are language attitudes, sense of cultural membership, and the learners' positioning with respect to the aspirations of their communities and indigenous organizations. Although the general teaching components can be in fact planned for several ethnic groups, the implementation of the proposals and the evaluation of the outcomes must be done individually and by the indigenous group to capture the uniqueness of each sociolinguistic context.

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1 Introduction

The present study deals with relearning processes of endangered Amazonian languages in the context of FORMABIAP (more details at www.formabiap.org). The Amazon Basin is characterized as one of the most culturally and linguistically diverse areas in the world, with about 300 languages belonging to twenty or so language families, plus dozens of genetic isolates (Queixalós 2009). Nevertheless, Amazonian languages are, for the most part, both poorly documented and highly endangered. The majority of these languages are spoken by relatively small speech communities, compared to Spanish or Portuguese, the two major languages with which they coexist in highly asymmetrical relationships.

This chapter focuses on two Amazonian languages: Kukama-Kukamiria (henceforth Kukama) and Kichwa. Their territories are located in the *Loreto* region of Peru. Loreto hosts an extreme linguistic diversity, which includes about 23 languages (Solís Fonseca 2009; Queixalós 2009). However, the speakers of these languages represent only a small percentage of the total population in the region. According to census data from Peru's *Instituto Nacional de Estadística e Informática* (INEI 2017), 9.8% of the population in Loreto self-identify as a member of an indigenous group, yet only 6.4% of them declare to have learned to speak in an indigenous language. These statistics illustrate the increasing social pressure to learn, and ultimately shift to, Spanish.

Languages such as Kukama and Kichwa continue to lose ground in daily use. By including indigenous languages as part of a teaching training program, FORMABIAP aims to counter the progression of rampant language loss. However, data regarding the outcomes of relearning these ancestral languages by heritage speakers do not exist. This is particularly important given that these speakers are, or will eventually be, in charge of teaching these languages in their communities. It is often mentioned that due to their limited command in the ancestral languages, heritage speakers lack the ability to teach these languages (cf. López & García 2016: 127). However, no study has ever attempted to explore how much heritage speakers have actually achieved in the process of relearning their languages. Importantly, in the context explored here, this process does not end at their graduation from FORMABIAP, but continues as they teach the languages to children and engage with other speakers in the linguistic and cultural reanimation of their communities.

This document aims to start a conversation regarding both heritage language teaching and assessment in the Amazonian context. We look at original empirical data collected from eight heritage speakers and offer the first attempt to understand this relearning process in higher education. An additional aim of

the paper is to identify patterns of use, as well as areas of improvement, in the speech of heritage speakers in order to contribute to curricula development. An important finding of this study is that all the participants exhibit various degrees of language expertise. Thus, indigenous heritage languages can be relearned in a combination of naturalistic and well-structured instructional settings, as the outcomes of the multifaceted approach implemented by FORMABIAP are both tangible and substantial.

2 Local context

Any formulation of pedagogical proposals requires a prior characterization of the sociocultural and linguistic contexts of the communities and of the students themselves. In this section, we set the background for the study.

2.1 Kukama

The Kukamas live in small villages spread along several Amazonian rivers. According to the parameters provided by UNESCO (Moseley 2010), the Kukama language is severely to critically endangered. The total number of Kukamas is estimated at 20,000. However, the INEI 2017 census indicates that only 1,185 individuals have learned to speak this ancestral language, and 82.6% of them live in the Loreto region.[1] Most of the remaining fluent speakers are elders, and certainly none of them are monolingual in Kukama (Vallejos 2016b). Children are no longer learning the language, as natural processes of language transmission have been interrupted more than five decades ago. Over the years, a growing concern with respect to the vitality of the language has become evident within the speech community itself, which has resulted in a number of revitalization initiatives. These efforts are being implemented mainly through formal education. As a result, it is possible to find different types of speakers of Kukama, in the sense of Grinevald & Bert (2011), including traditional speakers, latent speakers, neo-speakers, and rememberers (Vallejos 2016b).

One of Kukama's most salient typological features is a morphological distinction between male and female speech in several grammatical categories. Major grammatical categories like person, number, tense, and modality are conveyed by positionally-fixed clitics. Five tense clitics encode three degrees of distance into the past and two into the future. There is a four-way epistemic modal system

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[1]According to (INEI 2017), 9.7% of the 1185 Kukamas live in Lima/Callao, 3.8% in Ucayali, and the remaining 4% are spread throughout the country.

encoding via second position clitics. In Kukama there is neither case marking nor affixal indexation of core participants to express grammatical relations. In main clauses, SVO is the pragmatically unmarked constituent order. While OSV is employed with salient objects, SOV is only possible if the verb is marked by progressive aspect. Oblique phrases are marked by postposition, and clauses are linked by dedicated adverbial subordinators. Clause nominalization is a central subordination strategy, particularly in relativization.

2.2 Kichwa

The Kichwas live in the basins of the Napo, Putumayo, Pastaza and Tigre rivers, in the Loreto region in Peru. Those who live in the basins of the Napo and Putumayo rivers call themselves *Napu Runas* and those who live in the Pastaza and Tigre rivers call themselves *Ingas*. They are also located in the San Martín region, known as *Lamistas*, and in Madre de Dios region, known as *Santarrosinos*. According to the last census, 99% of the Kichwa live in Loreto, and only 1% live in other regions. The Kichwa speakers who live along the Napo River are the descendants of Ecuadorian Kichwa populations called *Quijos* (Mayor & Bodmer 2009). The Kichwa themselves assert that their parents or grandparents came from Ecuador, and a group of them migrated from the Napo River to Madre de Dios during the time of rubber extraction. Although the Ministry of Education of Peru mentions that Kichwa is a variety of the Quechua language, in the last national census (INEI 2017), Kichwa is listed as a different language than Quechua. According to this census, 5,751 declared that Kichwa is the language in which they learned to speak. Although the number of Kichwa speakers in Peru seems to be very small, their linguistic kinship with the Quechua-speaking population (3,799,780 according to INEI 2017) relativizes this situation. Kichwa exists in a range of sociolinguistic situations, from communities where this language is the main means of communication among all generations, to communities where Spanish has almost completely replaced Kichwa (see §2.4).

The Kichwa varieties are part of the Quechua linguistic family. There are, however, important cultural and linguistic differences between Kichwa and Quechua. From a cultural perspective, due to their geographical location in the Peruvian Amazon, the Kichwas' worldview is closer to other Amazonian peoples, including the conception of territory as a fundamental element of life. Perhaps the most salient phonological difference between Kichwa and Quechua is that Quechua makes a distinction between post velar /q/ and velar /k/, Kichwa does not make this distinction. Regarding its typological profile, Kichwa is characterized as an

agglutinating language with suffixal morphology. The preferential order of constituents is SOV, although SVO, OVS are also possible. Grammatical relations are encoded through case marking and verb indexation. Finite verbs take TAM suffixes. Adnominal possession is expresses via a genitive marker suffixed to the possessor.

2.3 Speaker types in endangered language contexts

Amazonian languages exhibit different degrees of endangerment. Speech communities of endangered languages typically comprise several types of speakers who show variance in competence. Grinevald & Bert (2011), building on Dorian (1980), propose four clusters of variables to identify types of speakers: (i) language competence cluster (level of acquisition attained and degree of individual loss), (ii) sociolinguistic cluster (vitality of language at time of acquisition and the age of the speaker at the time of exposure to the language), (iii) performance cluster (level of use of the language and the attitudes towards the language), (iv) self-evaluation of language skills (which can range from under-evaluation, insecurity and self-denial to over evaluation). The implementation of these four parameters gives the following types of speakers (Table 1).

FORMABIAP trains neo-speakers, who, if we highlight their cultural ties to the Kukama and Kichwa ethnic groups, are considered *heritage speakers*. These students enter the program with very limited knowledge of their ancestral languages (more details in §5 and §6).

2.4 Sociolinguistic contexts

Concurrent with different speaker types, Amazonian languages are spoken in a variety of sociolinguistic contexts. Considering the social dynamics and the actual use of the indigenous languages and Spanish, it is possible to identify a wide range of complex scenarios. For example, if we take the Kichwa villages along the Napo River in Peru as a reference point, we can identify a continuum in terms of the vitality of the Kichwa language. In the High Napo River (*Alto Napo*), an area close to the Peru-Ecuador border, there are villages such as Chingana and Humandi where children are learning Kichwa as a first language. In those villages, Kichwa is still the dominant language among all the generations, and very few know any Spanish.

In the High Napo region, but further south from the Peru-Ecuador border, there are villages such as Angoteros and Campo Serio where bilingualism in

Table 1: Typology of speakers of endangered languages (Vallejos 2016b: 147)

Fluent speakers	Also called traditional speakers, they have acquired the language fully and are able to engage in spontaneous conversations. Such speakers are able to provide narratives with very minimal use of borrowings.
Latent-speakers	They demonstrate receptive skills but with varying degrees of production. They have not had regular conversation partners and display modified patterns that can be considered mistakes by fluent speakers.
Rememberers	This category includes speakers with advanced level of attrition often due to traumatic circumstances. They have passive knowledge and very limited productive skills, which usually includes frozen expressions. They may have regained or reacquired some partial use and could be at first inhibited to get involved in revitalization efforts.
Former speakers	They are also called ghost speakers, those who deny any knowledge of the language. This denial is a consequence of strong negative attitudes associated with speaking a language that is usually overpowered by a national language.
Last speaker	This may be a socio-political category; that is, public and social role assigned by a community, or self-attributed.
Neo-speakers	They are the product of revitalization initiatives. They have positive attitudes towards the language and make conscious efforts to learn it. They can achieve a range of proficiency levels and show signs of language obsolescence.

Spanish and Kichwa is gaining ground among male adults. In those villages, Spanish is used in rather limited contexts; note that by the time children start schooling around the age of five, they are predominantly monolinguals in Kichwa. Even further south in the High Napo region, there are villages, such as Ingano Llacta, where bilingualism in Kichwa and Spanish has been extended to the entire pop-

ulation. In these villages, every generation is bilingual. As a result, children are currently learning both languages from birth.

In the Mid Napo River (*Medio Napo*), in villages like Copal Urcu, San Carlos, Rumitumi, Diamante Azul, and San Jorge, the majority of the children and the youth already speak Spanish as a first, and mostly only, language. However, these generations are still exposed to Kichwa during their interactions with their parents and grandparents. The generations of adults and elders communicate among themselves in Kichwa, but they tend to address their children in Spanish. As a result, most of the children and the youth can understand Kichwa, but show very limited production in this language.

In the villages located along the Low Napo River (*Bajo Napo*), the situation is more pressing. In villages such as Lagartococha, Puca Barranca, and San Juan de Yanayacu, Kichwa has been displaced almost completely. Although it is still spoken by elders, and they may use it in sporadic situations among themselves, Spanish is already the only language of daily communication for all generations. Beyond the Napo River, the Kichwa villages located along the Pastaza River and the Tigre River also show displacement of Kichwa in favor of Spanish, mainly among children and the younger generation.

As for the Kukama villages, most of them have experienced language shift in favor of Spanish, similar to the last scenario discussed for Kichwa. Nowadays, Kukama is only known by elders, and they use it in very restricted contexts. However, there seems to be a difference between the Kukamas and the Kichwas. The Kukamas are more aware of the loss of their language, and in the last decade they have started to express their concerns more openly. In some regions, there are ongoing movements of cultural re-appropriation to reconnect with their roots, and relearning their heritage language is part of this movement.

Note that the possibilities for re-learning the indigenous language decreases from one scenario to another. Taking Kichwa, again, as a reference, it is possible to say that natural language transmission is almost guaranteed in the first scenario. The second and third scenarios result in different degrees of bilingualism; these new language practices tend to go hand in hand with negative attitudes towards the indigenous language. In cases like this, children learning the indigenous language as a first language is no longer guaranteed. In the fourth scenario, children are not acquiring the indigenous language as a first language, but the context is favorable for re-learning it with heritage language methodologies. In the fifth scenario, the functionality of the indigenous language is extremely limited, and so is the possibility of learning the indigenous language without a well-thought-out revitalization effort.

Notably, one of the many challenges FORMABIAP faces to teach indigenous languages is that its students come from all these different scenarios.

3 The FORMABIAP Program

FORMABIAP began its activities in 1988, as a result of an agreement between the Ministry of Education of Peru, the *Corporación Departamental de Desarrollo de Loreto* (CORDELOR), the *Asociación Interétnica de la Selva Peruana* (AIDESEP), and the Italian NGO Terra Nuova. FORMABIAP was created as a program to train indigenous teachers in intercultural bilingual education (IBE) within the framework of a Pedagogical Higher Education Institute, based in the city of Iquitos. From its inception, FORMABIAP was a pioneer model for a genuine collaboration between the government and a national indigenous organization. The role of indigenous specialists and scholars in the teacher training process, as well as the participation of community members in the development of the curricula for elementary education are some of the key components of its success. In its 32 years of work, FORMABIAP has trained 1,213 indigenous teachers from 16 Amazonian ethnic groups, who have taught an estimated 363,900 Amazonian children (Trapnell Forero et al. 2018).

FORMABIAP considers that languages and education must be approached from the specific social contexts in which the project operates, and from a political and historical vision that allows its students to understand how the processes of colonial domination have influenced the current situation of the indigenous languages (Trapnell Forero et al. 2018: 38). At the beginning of the FORMABIAP project, most students had an indigenous language as their L1, with the exception of the Kukamas who were mostly monolingual in Spanish. Over the years, the sociolinguistic landscape has become more heterogeneous and complex to address. On the one hand, there is now a greater number of students with serious limitations in oral Spanish. On the other hand, the number of students that have Spanish as a first language has increased.

3.1 Why heritage language instruction in FORMABIAP

A second language is any language an individual learns in addition to their first language, and no previous knowledge of this language is implied. In contrast, a heritage language entails certain exposure to the target language during childhood, as well as a cultural connection to the language through family, ancestors, community, or country of origin. In this view, a heritage language can be an

indigenous language that underwent displacement (i.e. Kukama and Kichwa in Peru) or an immigrant language (i.e. Spanish in the United States or Turkish in Germany). In a narrow definition, heritage learners are bilinguals, but the language they learned in childhood at home is no longer their dominant language; instead, they are dominant in the hegemonic language of the society in which they live. In a broad definition, heritage learners have had at least some input during childhood but did not grow up with this language as a means of communication (Polinsky & Kagan 2007; Rothman 2009). As a result, heritage language learners can display widely diverse levels of proficiency (Valdés 1989, 2005). In the cases discussed in this article, we adopt a broad definition of heritage learners.

Heritage languages, as all languages, are surrounded by ideologies, from issues of identity and group membership, to views of language as a commodity that question the value of an ancestral language in current times. Other common ideologies relate to who are the "true owners" of a given language, who should have the ultimate say on how the "real language" should sound like, and diverse perceptions regarding language variation and change (see, for instance, Lopez Odango 2015). Thus, in multilingual settings such as the Amazon, the development of intercultural communication competence needs to be stressed. This development involves self-reflection concerning language and culture, and it involves attitudinal changes toward one's own and others' cultures and languages.

The fact that heritage learners bring some linguistic knowledge from childhood has opened important avenues in second language acquisition research, particularly on the role of age, input, and implicit versus explicit knowledge (Valdés 2005). For example, heritage speakers seem to have an advantage over L2 learners not only with regards to phonology, but also in some aspects of morphology and syntax (Montrul 2008). Issues related to linguistic mechanisms and the types of patterns that emerge in language loss and revitalization contexts (Hinton 2001) are also important theoretical questions for language change. The impact of the results of these new lines of research in teaching methodologies continues to be explored (Parodi 2008, Potowski 2018).

Motivation is critical to language learning, but particularly so in heritage language learning. If cultural heritage is a motivating factor to learn a language, it can promote learner autonomy to continue the learning process beyond the formal settings. This is critical in endangered language contexts where the target language is no longer used in daily communication. For example, leaners of Kukama and Kichwa have to make an effort to build a community of practice in their villages.

Heritage learners can also vary with respect to forms of exposure and age of acquisition (naturalistic process during childhood, formal instructional settings as adults, revitalization contexts guided by elders and activists, etc.), communities of practice, and amount of access to input in the target language. The heritage speakers of Kichwa and Kukama who participated in this study were exposed to their ancestral languages to various degrees during childhood; however, all of the participants manifest a strong cultural connection and a sense of membership to their respective ethnic groups.

3.2 Profile of learners

Three decades ago, aspiring Intercultural Bilingual Education (IBE) teachers were older than the average high school graduates in Peru, and many had not completed a secondary education. Most of the students at the time predominantly spoke an indigenous language as their first language, with the exception of the Kukamas. In more recent years, however, the completion of a high school education became a prerequisite to enter FORMABIAP. By going through the complete educational system (i.e. kindergarten, primary, and secondary), in many cases outside their villages, these students have acquired greater proficiency in Spanish than those that entered FORMABIAP 30 years ago. Nevertheless, an unintended consequence is that these new generations have had fewer opportunities to learn the cultural knowledge of their people and their respective indigenous language. As a result, the most recent cohorts of students who come to FORMABIAP show less command of their indigenous languages. That is, the linguistic profile that used to be associated with the Kukamas has now been extended to other indigenous groups, such as the Awajun, Shawi and Kichwa. Note, though, that the Kukamas and Kichwas come with a very limited command of their heritage languages not only because of the formal schooling, but also because the generation of grandparents who speak those languages is declining rapidly.

Under these conditions, the relearning of an indigenous language by the future teachers is even more challenging. But even for students who have an indigenous language as their L1, having had less exposure to that language in the community life entails that it needs to be taught and expanded at the oral and written levels. In several cases, the indigenous language was generally used only in primary education (K-5), and then its use was interrupted at the secondary level. In the Amazon of Peru, secondary education is developed almost exclusively in Spanish. It is then imperative that the new cohorts that join FORMABIAP strengthen their competence in their indigenous languages, as well as their cultural traditions.

However, the demand for learning the indigenous languages arises not only because of FORMABIAP's institutional mission, but because there are now national IBE policies that demand communicative competence of the indigenous languages in the schools that provide an intercultural bilingual education (Ministerio de Educación del Perú 2016). In addition, according to the new official policies, teachers working in communities with heritage indigenous languages must implement cultural and linguistic revitalization (Ministerio de Educación del Perú 2016). In those communities, children have access to very few opportunities to listen to the indigenous language because it is spoken only by older people in very restricted contexts. Thus, given that teachers have to teach these heritage languages to the children of these schools, the indigenous language must be relearned as part of their teacher training in FORMABIAP.

3.3 Profile of instructors

FORMABIAP hires language and culture *specialists,* who are fluent elder speakers. They come with their partners to live in Zungarococha, together with the students. Because of this configuration, these elders are mentors and make themselves available to the students almost at all times and are a crucial resource on every aspect of their training.

Second, the *instructors* of the indigenous languages are community members with training in language teaching methodologies. The *instructors* are in charge of preparing and implementing the lesson plans with the input from the elder *specialists*. In addition, in some cases, there is also a *linguist* who collaborates with the specialist and the instructor. The role of the linguist in FORMABIAP is more focused on developing awareness about the structures of the language and guide the teaching process. They participate in the development of teaching materials, the incorporation of new genres and discourse practices into the classroom, and overall literacy development issues.

The Kukama and Kichwa participants of this study had an elder specialist and one or two instructors. Sporadically, the cohort also included a linguist in charge of the grammatical study of the indigenous language. Within the Kichwa group, there were also students who were fluent in Kichwa in the same cohort. For instance, this provided participant KICH-3 with opportunities for practice the language with his peers.

Beyond this formal training in FORMABIAP, heritage learners have the opportunity to further develop their linguistic skills during their professional practices in the villages. These are important periods in which heritage learners immerse

themselves with other speakers of the languages, and the confrontation with their own communicative skills is unavoidable.

3.4 Language classes

Six months per year, during five years, FORMABIAP students from different ethnic groups come to live in Zungarococha, a sort of academic town located away from the Iquitos city center. During this time period, FORMABIAP tries to guarantee that the students have different types of support to relearn their heritage languages. The teacher training curriculum has always considered a space for formal classes and hands-on workshops around the indigenous languages during their five years of study. The classes and workshops are conducted on average two hours a week, during nine semesters. For those students that do not need to relearn the indigenous languages, the workshop is aimed at the development of new discourse practices, literacy development and reflection on the grammar of the language. For heritage speakers, such as the Kukamas, these spaces are designed to relearn the indigenous language with the help of an instructor, a specialist, and possibly a linguist.

However, indigenous languages in FORMABIAP are not reduced to specific classes. They have a fundamental role in several other curricular components. For example, there is an umbrella educational project planned for each year of the training that is implemented by each indigenous group, rather than by academic level. Past projects include: technologies of house building, natural dye techniques, practices of traditional healing, indigenous food and diets, etc. Under these projects, topics from different areas (such as mathematics, social studies, ecology, communication, pedagogy) are developed through integrated activities. The indigenous languages are the language of communication during all those activities. Thus, these spaces constitute additional opportunities of exposure to the languages for heritage learners. However, it is also important to underscore that several students show high motivation to learn the language and so constantly seek to create new support mechanisms for their learning. For example, taking advantage of the technology, most of them now have a dictionary and/or a translator on their smartphones.

To monitor the progress of the students, FORMABIAP administers a diagnostic test to every student at the beginning of the five-year program, multiple assessment strategies throughout the nine semesters, and, in some cases, an achievement final test with written and spoken components. It is important to consider that, according to FORMABIAP's guiding rules, heritage speakers need to show systematic progress for their scholarships to be renewed. In fact, some students

have been removed from the program given lack of progress in this area. The discussion of these details is beyond the scope of this article.

Having set our framework and the background, in the next section we introduce the empirical methods employed to measure proficiency in a sample of Kukama and Kichwa alumni.

4 Assessment: approach and instruments

In general, heritage languages are also less commonly taught languages, or are only taught in non-mainstream environments. In the cases of Amazonian languages, few culturally appropriate materials for higher education exist, and setting baselines and benchmarks to measure proficiency in heritage speakers is still an area in need of attention. In addition, there is controversy whether the proficiency guidelines employed to assess second language learners is appropriate for heritage language abilities (Valdés 1989, Martin et al. 2013). Assessment of attained proficiency among heritage learners is essential for understanding the characteristics of their speech. It is crucial to identify areas of strength and error patterns in order to inform the curricular needs of instructional programs. Above all, it is important to understand heritage students' motivation to learn languages that "lack" prestige and functionality in the eyes of the dominant society.

A basic assumption here is that language proficiency is a continuum.[2] We follow an Integrated Performance Assessment approach to survey the performance of individual students and determine an overall, "big picture" view of their progress (ACTFL 2012). We employ Can-Do Statements, which require learners to show what they know and can do, to demonstrate their language proficiency. Can-Do Statements reflect the continuum of growth in communication skills through different levels (Moeller & Yu 2015). Our goal was to examine the participants' ability to use culturally appropriate language, as judge by language consultants, to communicate spontaneously in non-rehearsed contexts. But encouraging heritage speakers to produce spontaneous speech, or even eliciting narrative using stimuli, can be difficult given the surrounding social pressures and ideologies that can derive in linguistic insecurities (see, for instance, Silva-Corvalán 1994). In order to collect empirically based data, we provided learners with opportunities to use their heritage language in authentic, real-world situations. We used an authentic video, picture cards, and a printed questionnaire.

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[2]According to the American Council on the Teaching of Foreign Languages Guidelines (ACTFL 2012), the continuum consists of four major levels: novice, intermediate, advanced, and superior. These major levels are further subdivided in eleven levels. The ACTFL Guidelines are intended to be used for holistic assessment and have instructional implications.

4.1 Video

Videos were used for comprehension tasks. For Kukama, we selected a culturally relevant video of a procedural text collected within the context of the Kukama-Kukamiria Language Documentation Project (Vallejos 2014). It shows a 65-year-old woman explaining how to make a hand fan with a palm tree leaf. Only the first 10 minutes of a 17-minute video were selected. In this excerpt, the speaker introduces the materials and tools to be used, and then proceeds to describe a sequence of steps to make a fan as she weaves one. This video is particularly useful because of the pace of the speech as the speaker is carefully explaining the process.

The participants watched the video twice. In the first pass, they completed a word recognition task. They wrote down all the words and expressions they could identify as the video was playing. In the second pass, they focused on both main ideas and supporting details and captured them in phrases and complete sentences. The second pass was also an opportunity to check and augment their word lists.

4.2 Picture cards

Picture cards were employed for production tasks. Two sets of picture cards that portray Amazonian scenes were selected as visual stimuli to elicit guided stories. These cards are part of the series *Cuentos en Tarjetas* created by Amías et al. (2003), from FORMABIAP. The first set consists of cards that portray scenes about a dog that goes hunting with its owner in the jungle (see Figure 1). The second set consists of cards about three armadillos who go out to collect wild seeds and, while doing so, fall into a trap.

The participants organized the cards in the order of their preference and then proceeded to create a story. These stories were recorded to allow qualitative and quantitative analyses, including speech rate. These speech samples are rich in objectively recognizable linguistic features in the areas of phonetics, phonology, morphology, syntax, discourse, and lexicon. It is important to note, however, that this procedure elicits samples of what speakers can do and help us identify areas of improvement, but it is not necessarily useful for discovering areas that speakers do not know yet. In the future, we may need to include other tasks to capture what advanced learners cannot do and need focused help with.

Figure 1: Example of a set of picture cards (Amías et al. 2003)

4.3 Questionnaire

We created a questionnaire to collect biographical information to determine what social and cultural factors influence their attitudes, motivations, and linguistic choices (cf. Alarcón 2010). It includes 32 items in total. The political and affective issues surrounding heritage speakers came to light in these questionnaires. The first portion elicits information regarding their exposure to their ancestral languages during childhood, their motivations to become bilingual teachers, and their knowledge of their ancestral language before coming to FORMABIAP. In the second part of the questionnaire we collected information regarding language behaviors, attitudes towards dialectal and generational variation, and self-assessments of their heritage language abilities. Data from the questionnaire allows the examination of potential correlations between self-reported proficiency level, and speech rate, word recognition, and the use of specific grammatical patterns.

In the next section, we present preliminary findings on linguistic correlates of proficiency in Kukama and Kichwa as heritage languages, based on data from the questionnaires, as well as perception and production tasks.

5 Results: Kukama

This study looks at five Kukamas. They are all heritage speakers that entered the program with very limited knowledge of their ancestral languages. The profiles of the participants in which group is described in detail below.

5.1 Participant profiles

Five heritage speakers of Kukama, four males and one female, participated in this study. Their ages ranged from 24 to 36 (avg = 28), and they all attended FORMABIAP between 2012 and 2016.[3] They had two male instructors of Kukama, who are themselves community members and FORMABIAP alumni (see §3.2). During their training, they were also mentored by four Kukama specialists, two male and two female elder speakers, who worked in the project at different points in time.

Data from anonymous questionnaires show that after finishing high school, they all wanted to become bilingual teachers, and four of the five participants indicated having the support from their communities and indigenous organization. As for their exposure to Kukama at an early age, four of the five participants indicated that their parents understand the language and that their grandparents would speak it, but only from time to time because they lack regular conversation partners. All the participants are aware of the level of endangerment of Kukama and seem committed to ongoing preservation efforts. They display very positive attitudes towards their Kukama identity and their heritage language; however, four of the five participants indicated they prefer not to speak Kukama outside their community contexts to avoid public shame. As for language ideologies regarding language variation, all the participants acknowledge geographic and generational differences; however, four of the five participants indicated they aspire to speak like the elders because they speak the true Kukama.

Regarding their knowledge of Kukama at the time they enrolled in FORMABIAP, all of the participants say they knew common words and expressions. For words, the examples provided in the questionnaire are *ipira* 'fish', *yawara* 'dog' *atawari* 'chicken', *arara* 'macaw', *uni* 'water', *irara* 'canoe', '*ya-pukita* 'paddle', etc. For expressions, they listed: *era na kuema/karuka* 'good morning/afternoon,' *tsaniuri* 'Come on in', *makatipa na utsu* 'Where are you going', *ta tseta eyu* 'I want to eat', *ta kurata kaitsuma* 'I drink yucca bear'. Even though they knew some words and expressions, all of them said they could not understand and engage with fluent speakers of Kukama. In the self-assessment of their proficiency, all declared having made significant progress in learning the language. On a 5-point scale, they gave themselves an average score of 4.2 for reading and writing, and 3.2 for speaking and listening.

Given the lack of baselines and benchmarks to assess proficiency in Kukama, a fluent, elder speaker with 20 years of experience as the community linguist,

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[3]The participants attended a propaedeutic in 2011, before starting their teaching training, but Kukama was not included in this preparatory phase.

and who was an instructor of the Kukama language in the FORMABIAP project, assessed the speech samples of all the participants. She listened to each story and grouped the participants into three categories: A: *está aprendiendo* 'he/she is learning', B: *habla, pero tiene que aprender y practicar más* 'he/she speaks, but needs to learn and practice more', C: *ya habla, pero necesita corregir algunas palabritas* 'he/she speaks already, but needs to fix some little expressions'. We interpret these categories as A being towards the lower end of the proficiency continuum, and C towards the higher end of the continuum. According to this specialist, the participant KUK-1 should be in category A, KUK-2 and KUK-3 in category B, and KUK-4 and KUK-5 in category C. The profiles of the Kukama participants is summarized in Table 2.

Table 2: Kukama participants

Participant	Gender	Age	Category
KUK-1	M	36	A
KUK-2	M	28	B
KUK-3	F	24	B
KUK-4	M	27	C
KUK-5	M	25	C

5.2 Oral comprehension

The data to assess oral comprehension comes from the activities with the video as explained in §4.1. All the participants completed the word recognition task with extreme ease. Remarkably, four of the five participants listed only those items that they clearly knew; only one participant listed a couple of nonwords, which were excluded from the counting. The vast majority of the items registered were content words, including nouns (e.g. *marawi* 'hand fan', *miriti* 'palm tree'), verbs (e.g. *imaki* 'select', *kauki* 'wait'), and adverbs (e.g. *ikun* 'today', *ikumenan* 'soon'); only one participant listed also a few function words, such as pronouns and demonstratives (ex. *ay* 'he/she', *ajan* 'this'). We included both of them in our calculations.

The second task consisted of identifying phrases and sentences. All the participants were able to recognize and isolate a variety of syntactic structures. Within the PHRASES category we report only those that were listed on their own, not as part of another larger syntactic constituent (i.e. NP objects within a clause

were not counted as phrases). This category comprises noun phrases (ex. *ini puwa* 'our hand'), verb phrases (ex. *uchima tsa* 'extract the leaf') and nominalized constructions (ex. *kuarachi tatatan* 'something that has dried with sunlight'). Interestingly, no one listed postpositional phrases on their own. In the CLAUSES category, we included simple clauses (ex. *ikun kuashi ini yauki marawi* 'today we will make a hand fan'), complex constructions (ex. *awanu tseta purepeta ajan* 'people want to buy this', *ini yaukiai imaki ipukun* 'we make it by selecting the long ones'). The results are provided in Figure 2. Note that only one participant, KUK-1, listed more phrases (n = 9) than clauses (n = 5). All the other participants registered more complete clauses than phrases, which may point towards more advanced comprehension skills. However, there are not significant differences among the participants in the overall comprehension of phrases and clauses.[4] In sum, the data suggests that all the participants have achieved strong comprehension skills.
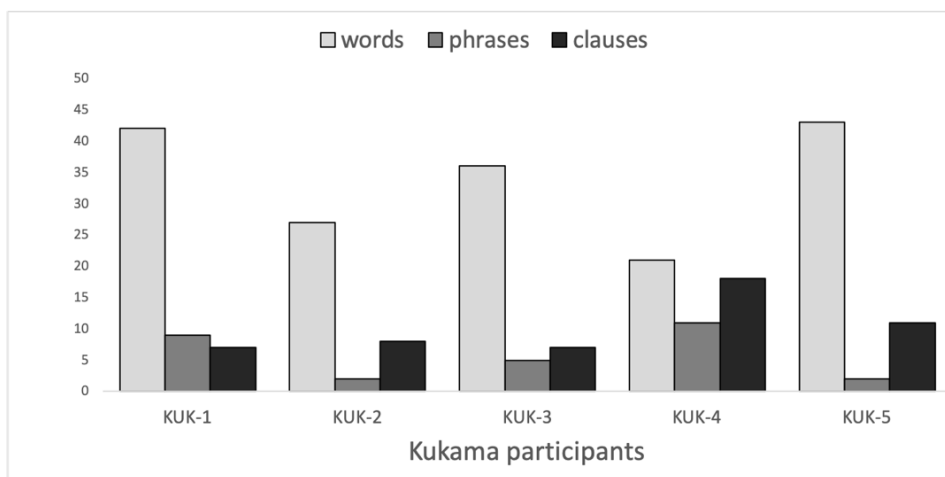

Figure 2: Kukamas' oral comprehension

5.3 Oral production

As with the comprehension tasks, we let the benchmarks for Kukama oral proficiency emerge from the data itself. The literature on heritage language teaching and learning suggests that heritage learners follow unique trajectories and

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[4] χ^2: 6.549, *p*: 0.161727. The result for *phrases* and *clauses* is not significant at $p < 0.05$. It becomes significant if we include *words*.

should not be compared against traditional speakers (see, for instance, Valdés 2005). Following this view, the benchmark to measure oral proficiency in this study is not the speech of the elders. In collaboration with speakers of the language, we transcribed the recordings of the stories produced by the participants to quantify several parameters. First, because each participant was invited to speak for as long as he/she wanted, we recorded the length of each story. Second, we quantified the total number of words used. Third, we calculated the number of word types (including both function words and content words) to get a sense of vocabulary knowledge and the amount of repetition of words. Finally, we calculated speaker rates as word-per-minute output by dividing the total number of words by the length of the stories. The idea being that lower proficiency speakers have more difficulty in accessing lexical items, which slows down their speech. The results for both stories are provided in Figure 3.

The results for oral production suggest that participant ᴋᴜᴋ-1 is at a lower level in the proficiency continuum compared to the other participants, particularly with respect to the length of the stories and the overall number of words produced. Kᴜᴋ-1's score for word types (n = 55) is also lower than the average for all the participants (avg = 94). However, a chi-square test comparing word types and speech rate reveals that there is not a significant difference among the participants.[5]
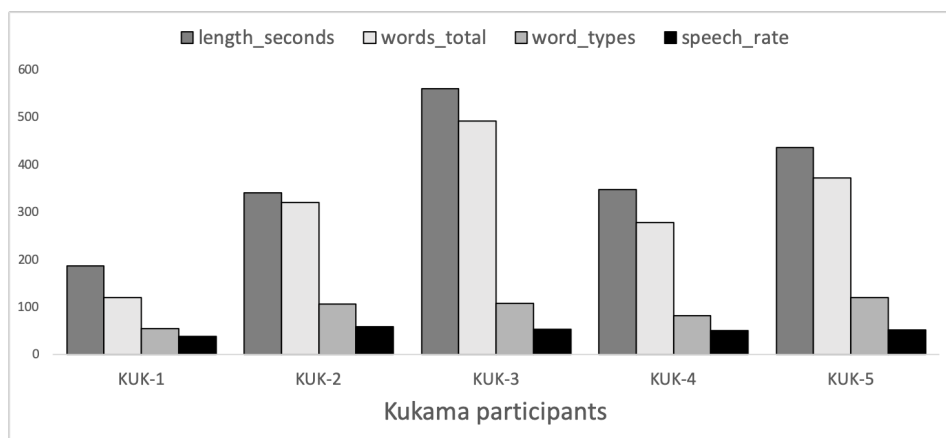

Figure 3: Kukamas' word tokens and types in oral production

An interesting finding is that the assessment provided by the Kukama specialist does not align well with some scores in Figure 3. While her observations re-

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[5]χ^2: 4.4693, *p*: 0.346208. The result for *word types* and *speech rate* is not significant at $p < 0.05$. It becomes significant if we add *number of words*.

garding ᴋᴜᴋ-1 seem to hold, according to this specialist, participant ᴋᴜᴋ-3 should be a little behind participants ᴋᴜᴋ-4 and ᴋᴜᴋ-5. Nevertheless, as shown in Figure 3, ᴋᴜᴋ-3 has the highest scores for total number of words produced and word types employed. Thus, these scores offer only a glimpse into the story of this relearning process. In order to have a fuller picture, and guided by the specialist's observations, we look into specific linguistic features produced by the participants.

5.4 Qualitative analysis

Our results suggest that knowledge of lexical items and speech rate might not be correlated with grammatical knowledge and pragmatic competence. This seems surprising given that lexical access tends to also be accompanied by difficulty constructing phrases and clauses. Thus, some discussion of the results on specific subcomponents of the grammar are in order.

5.4.1 Phonetics and phonology

A recurrent observation about heritage speakers is that even the novice sound native-like, which contrasts with what we see in conventional second languages (Polinsky & Kagan 2007). This holds true for the Kukamas as well. For instance, impressionistically, their intonation patterns sound comparable to fluent speakers. Stress assignment is always on target; it is realized in the penultimate syllable except in words that end in a consonant (ex. *éyu* 'eat', *eyún* 'food'). Phonological processes are consistently implemented (ex. sonorization of voiceless stops following nasals, as in *temente* [temende] 'there is not', *ajanka* [ajanga] 'here'). Optional phonological processes are implemented randomly (palatalization of affricate *tsitsa* [chitsa] 'face'). All participants tend to produce the central vowel /ɨ/, as /i/. Arguably, they have not added yet this vowel to their vowel inventory.

5.4.2 Morphosyntax

In Kukama, grammatical categories such as person, number, tense, and modality are conveyed by positionally fixed clitics. All the participants make use of a subset of these forms. Importantly, given that no suffix or clitic is obligatory in Kukama, the lack of bound morphology do not render structures ungrammatical. The most frequently used postpositions are *-ka* 'locative', *-pu* 'instrument', *-muki* 'comitative', and *-kuara* 'inesive'. Documented verbal morphology include *-ka* 'iterative', *-ta* 'causative', *-ari* 'progressive'. The completive *-pa* was not documented, and the use of past tense markers is also limited. All the participants

also used plural markers and nominalized forms and their underived counterparts. Some examples are *eyu* 'eat', *eyun* 'food' *ipurkari* 'hunt', *ipurkarin* 'hunter'. The focus clitic =*pura* was used by two participants, and generally with the same host which suggests they learned it is a chunk, as shown in (1).

(1) rian=*pura* ikian   awa=*kana*   umi ra   yawara
     then=FOC DEM.MS person-PL.MS see 3SG.MS dog
     'at that moment these people see his dog'

One of the most salient typological features of Kukama is the presence of grammaticalized gender indexicals (for details, see Vallejos 2015). Kukama does not have grammatical gender; that is, it does not encode the gender of a referent. Kukama's gender indexicality is a categorical distinction that encodes the gender of the speaker. Male and female speech is expressed in several categories, including personal pronouns, indefinite pronouns, demonstratives, number marking, and connectors. Heritage speakers use plural markers, as =*kana* in (1), and the first-person pronouns (*ta* vs. *tsa/etse*) quite accurately. The second-person pronoun, *na*, does not vary from women and men. However, some of the participants tend to have difficulties with third-person pronouns (*uri/ra* vs. *ya/ai*) and, the first-person exclusive pronouns (*tana* vs. *penu*) did not show up in the stories. Although one male participant used a few female forms (*yamua* instead of *ramua* 'other', *yaepetsui* instead of *raepetsui* 'then'), male speakers consistently used male pronouns, as *ra* in (1). The female speaker had more difficulties with gender indexicals, as discussed further, below.

Kukama has several strategies to combine clauses into more complex sentences. Clause nominalization is a central subordination strategy, particularly for relativization functions. The language has a set of subordinators to express several logical relations, such as cause, condition, and temporal simultaneity (Vallejos 2016a). The participants made very limited use of clause combining strategies.[6] To link simple clauses, they use prosody; clauses are produced within a single intonation contour and the semantic relationship between clauses are left to be inferred from context, as shown in (3). This is an area that needs attention.

An area that seems to represent a challenge is information questions. Kukama has the interrogative marker -*tipa* that is attached to an interrogative pronoun, or the piece of information under interrogation. Only two participants attempted to make questions with this morpheme, the others used only rising intonation.

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[6]Two of the five participants used two purpose subordinators at once, but with the same verb (*eyu-mira-tsen* eat-PUR2-PUR3). This sequence may have been learned as a single chunk.

However, the syntactic structure of the attempted questions tends to be problematic, as shown in example (2a), produced by KUK-5. In (2a), the sentence has an interrogative pronoun, but the interrogative marker is in the verb. Also, the subject of the clause is missing. The Kukama specialist provided two potential target constructions according to the context of the story, which are given in (2b). In the first, the identity of the object is being interrogated. In the second, the predicate is being interrogated, but in this case the object argument needs to be realized.

(2) a. mari   tseta=*tipa* eyu
         What want=INT eat
         'What want eat' (Lit.)

    b. mari=*tipa* na   tseta eyu / Tseta=*tipa* eyu-n
        What=INT 2SG want eat   want=INT eat-NZR
        'What do you want to eat?' 'Do you want food?'

It should be highlighted that some types of complex predicate constructions – i.e., clause constructions with more than one predicate – are employed by all of them. Some examples are provided in (3c) and (3e), below.

5.4.3 Discourse pragmatics

Recall that according to the scores in Figure 2, the participants could be located at relatively similar points in the proficiency scale, except KUK-1. However, the Kukama expert put them in three groups. KUK-2 and KUK-3 were categorized in group B ("he/she speaks but needs to learn more and practice more"), while and KUK-4 and KUK-5 in group C ("he/she speaks already, but needs to fix some expressions") by the Kukama expert. The explanation seems to lie in the fact that their speech differs in terms of discourse organization.

Story telling is an important cultural practice among Amazonian peoples. Kukama elders are generally exceptional storytellers, and most traditional stories have a message regarding social norms and expectations in the community. These stories are told for the most part in the third person, and most of them concern animals interacting with each other and their surroundings (see an example in Vallejos 2018). Their stories are full of dialogue and direct quotations. To incorporate direct speech from participants assigned to different sex categories, they re-center the referents of the gender indexicals for each speech event. The stories collected with the picture cards lack these features, which is perhaps explained by the artificiality of the stimuli.

Consider (3), an extract from one of the stories produced by participant KUK-4. This story flows well. There is almost null use of bound morphology, but this speaker employs complex predicate constructions, as in (3a), (3c), and (3e), as well as reduplication of verbal roots, as in (3e), to express aspectual subtleties.

(3) a. ra   utsu umi wepe, wepe uka   animaru
        3SG.MS go   see one   one house animal

     b. ra   chiwiki
        3SG.MS dig

     c. ra   utsu tsetuni,
        3SG.MS go   smell

     d. tsetuni ria animaru, hm
        smell   too animal   hm

     e. ra   yupuni kari-kari
        3SG.MS start   scrape-scrape

        '(a) It [hunting dog] goes to see one, a house of an animal, (b) he digs, (c) he goes to smell it, (d) to smell this animal's (house), (e) he starts to scrape and scrape' (KUK-4)

An interesting point that emerged in the speech of participants KUK-2 and KUK-3 is the overuse of the second person singular pronoun *na* for impersonal functions. Elder, traditional speakers of Kukama do not use *na* for generic, impersonal reference. In the excerpt in (4), the speaker KUK-2 seems to be describing the activity of hunting, not creating a story about the dog. If we substitute the pronoun *na* 'you' for *ra* 'he/she', we would have a third person story, similar to what we see in (3). In the extract in (5), the participant KUK-3 uses of *na* in similar ways, although in some cases, the resulting constructions are problematic and difficult to understand, as in (5d).

(4) a. na papa, na
        2SG father 2SG

     b. na erutsu yawara=muki
        2SG bring   dog=COM

     c. na chikari wepe animaru
        2SG look.for one   animal

     d. ikian, na papa, na
        this   2SG father 2SG

    e. na utsu taira=kana
       2SG go   daughter-PL.MS
       '(a) Your father, (b) brings you with the dog, (c) you look for an animal, (d) this one, your father, (e) you go with the daughters'

(5)   a. ajan   wepe yawara ipurkari-n umi=ura
        this.FS one   dog   hunt-NZR see=3SG.MS

    b. umi=ura   na tseta upi=nan […]
       see=3SG.MS 2SG want all=FOC

    c. tima na, na   yumi eyu-n   […]
       NEG 2SG 2SG give eat-NZR

    d. upi=nan tua-n=kana   titi-ka   na eyu-mira
       all=FOC big-NZR=PL.MS alone-REI 2SG eat-PUR

    e. tima na   yumi animaru ipurkari-n
       NEG 2SG give animal   hunt-NZR
       '(a) This hunting dog sees it [the food], (b) sees it (but) you want all, (c) you don't share the food, (d) all the adults are alone for you to eat, (e) you don't give to the hunting dog'

But why would these two participants use *na* instead of *ra* in story telling? One hypothesis is because the second person pronoun does not vary depending on the speaker's gender, as does the third person (*ra* vs. *ya*). A second hypothesis is Spanish influence. This impersonal use of *na* resembles the use of Spanish *tú* for similar discourse functions in Amazonian Spanish (Vallejos et al. 2020), as well as in English as evidenced in the translations.

The fragment in (5) is also interesting for other reasons. Speaker KUK-3 uses more bound morphology than other participants (i.e., the plural marker, clitic pronouns, nominalizer, focus, the subordinator of purpose), but recall that this speech was nonetheless rated lower than of KUK-4 and KUK-5. In addition to the overuse of *na*, this speaker mixes gender indexicals. For instance, in (5a), KUK-3 uses *ajan*, the demonstrative of female speech, but in the same line she uses =*ura*, the clitic pronoun for male speech (instead of =*ay*), and in (5d) the plural marker for male speech =*kana* (instead of =*minu*). Traditional speakers tend to be sensitive to the use of gender indexicals. But mastering this feature is difficult, and more so if there is not enough input of both types of speech and opportunity for practice. Note that the instructors of Kukama are males. Hiring female instructors should be considered in instructional planning in the future.

An additional point to note regarding the speech of heritage speakers is the innovative uses of *wepe* 'one'. This cardinal number is used as indefinite determiner, as seen in (3a), (4c), and (5a), probably because of Spanish influence. For example, everyone said *wepe kuashi* 'one day', which would work well if we were counting days, but not to make reference to a point in time in the past. For these function, traditional speakers would use expressions such *iminua* 'long time ago', *yamua/ramua kuashi* 'another day', *ikun kuashi* 'today', etc.

A final point regarding discourse is the very limited use of code switching by these participants. They all inserted very few loanwords, but nothing that would be considered switches to Spanish. This is surprising since in a previous study, with a different speaker sample (Vallejos 2016b), switching was extensively used by heritage speakers. A possible explanation is that the participants in this study have studied under different instructors.

6 Results: Kichwa

6.1 Participant profiles

Three heritage learners of Kichwa participated in this study: two women and one man. KICH-1 and KICH-2 are women, and their ages are 30 and 35, respectively. They attended FORMABIAP between 2015 and 2019 to get training as teachers of preschool education (*Educación Inicial Intercultural Bilingüe*) during the summer periods. It needs to be highlighted that the training of preschool teachers is different from the training of elementary school teachers. The former are teachers that must have a teaching position in a preschool to attend formal training in FORMABIAP; the latter do not hold a teaching position prior to graduation. As a result, participants KICH-1 and KICH-2 have had limited access to structured classes of Kichwa during their time at FORMABIAP; that is, they are mostly learning the language in their villages while working with kindergarteners. The third participant is a 22-year-old man; he attended FORMABIAP from 2012 to 2017 to become an elementary school teacher. As such, he has taken classes of Kichwa during his five years at FORMABIAP.

In the anonymous survey applied, two participants said they entered FORMABIAP because of the scholarship offered to carry out their studies, and because of the support of their communities and families. However, the three of them indicated that their motivation to learn Kichwa emerged in the framework of their professional training in FORMABIAP. KICH-3 self-reported that, in addition to the classes at FORMABIAP, he systematically immersed himself with

fluent speakers in the villages where Kichwa is the dominant language to gain proficiency.

Regarding prior knowledge of Kichwa before entering FORMABIAP, they stated that they knew common words like *challwa* 'fish', *wallpa* 'hen', *yachachikama* 'teacher' and phrases like *allipuncha* 'good morning', *shamuy* 'come', *kuyntaway* 'tell me'. However, they may have comprehended more words and phrases because two of them said they listened to their grandparents speak Kichwa during their childhood. All three said that in their community there were older adults who spoke Kichwa fluently. That is, the three participants of this study were exposed to Kichwa during their childhood by their grandparents and other elders; however, they did not foster the use of the language because the social conditions did not exist.

In the same survey, the three participants indicated they are proud of the Kichwa language and think that the elders speak the true Kichwa and that the young people should learn from them. In summary, the three participants have a strong appreciation of Kichwa, which is a good motivation to continue to learn this language.

A Kichwa specialist assessed all the speech samples to provide some input regarding the overall proficiency of the participants. According to this specialist, KICH-1 and KICH-2 should be assigned to category B (*habla, pero tiene que aprender y practicar más* 'he/she speaks, but needs to learn and practice more'), while KICH-3 is in category C (*ya habla, pero necesita corregir algunas palabritas para hablar fluido* 'he/she speaks already, but needs to fix some little expressions to speak fluently'). That is, KICH-3 is the most advanced of the three in terms of proficiency. A summary of the profiles of the Kichwa participants is given in Table 3.

Table 3: Kichwa participants

Participant	Gender	Age	Category
KICH-1	F	30	B
KICH-2	F	35	B
KICH-3	M	22	C

6.2 Oral comprehension

Given some technical difficulties, we could not collect oral comprehension data similar to the Kukamas. However, two Kichwa instructors who taught the three

participants indicate that all of them display advanced oral comprehension to fully understand narratives and descriptions. For example, in FORMABIAP there are certain sessions conducted entirely in the Kichwa language. Those sessions are dedicated to teach both the language itself, as well as socio-cultural studies. According to the instructors, the three Kichwa participants successfully participated in those sessions, working in close collaboration with other fluent Kichwa speakers. The second and third authors have worked with these participants, and believe the three of them have achieved advanced oral comprehension skills because they are originally from the Mid Napo River. As indicated in §2.2, in those villages, the generations of parents and grandparents still speak the language on a daily basis; thus, the conditions to relearn Kichwa are relatively favorable.

6.3 Oral production

To collect oral production data, we employed a similar strategy to the one used with the Kukamas. The participants organized the sets of cards and briefly described them creating a story.

The results for the oral production task are given in Figure 4. They show that participant KICH-3 is at a more advanced level in the proficiency continuum compared to the other two participants, particularly with respect to the length of the stories and the overall number of words produced. KICH-3's score for word types (n = 144) is above the average for the three participants (avg = 92). The only score in in which KICH-1 and KICH-2 are above KICH-3 is speech rate. However, a chi-square test comparing word types and speech rate reveals that there is not a significant difference among the participants.[7] The assessment provided by the Kichwa specialist aligns well with most of the scores in Figure 4. An analysis of specific linguistic features produced by the participants is found in Figure 4.

6.4 Qualitative analysis

6.4.1 Phonetics and phonology

The participants KICH-1, KICH-2 and KICH-3 do not differ much from fluent Kichwa speakers with respect to the production of different sounds, intonation and even accent patterns. One of the phonetic characteristics of Kichwa is the sonorization of the voiceless stops /p, t, k/ which become [b, d, g], respectively, after a nasal consonant. For example, /ñampi/ 'path' is realized as [ñambi], /inti/ 'sun' is produced as [indi]; /chunka/ 'ten' is produced as [chunga]. All the

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[7] χ^2: 4.4693, p: 0.346208. The result for *word types* and *speech rate* is not significant at $p < 0.05$. It becomes significant if we add *number of words*.
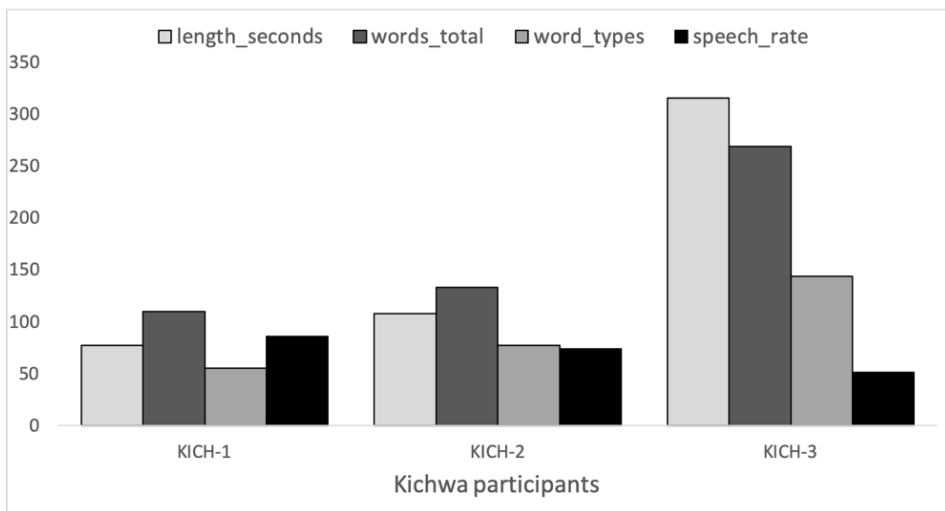
Figure 4: Kichwas' oral production

participants apply this voicing process. The stress pattern in Kichwa falls on the penultimate syllable, but in the spontaneous speech of fluent speakers, a word can undergo reduction of the stressed vowel, in which case the accent falls on the last syllable. For example, /manáchu/ 'is not true' becomes [manchú]. This vowel reduction phenomenon is documented in the speech of these heritage speakers as well. A related phenomenon is the fact participant kich-3 stresses the last syllable of some words like [tupán] that are generally produced as /túpan/ 'to meet someone', although this issue seems marginal.

6.4.2 Morphosyntax

Kichwa is an agglutinating, suffixal language; nominal and verbal words are constituted of a verbal and nominal root and their respective suffixes. Grammatical relations are expressed via case marking including the accusative *-ta*, and the indirect object *-ta* or *-ma*. Non-core arguments are marked by a set of postpositions, the most frequent being the locative *-pi*, the allative *-ma* (when the noun is non-human), the allative *-pam* (when the noun is human), the ablative *-manta*, and the comitative/instrumental *-wa*. The main predicate of the clause is marked mainly with person indexes including: *-sha* '1SG.FUT', *-nki* '2SG', *-nka* '3SG.FUT'. The main verb can also take the tense marker *-rka* 'past', aspectual markers such as *-ra/-hu* 'durative', *-shka/-ska* 'perfective', and the causative marker *-chi*. All these morphemes are basic and frequent in everyday conversation. The preferred order of

constituents in the clause is SOV, but this pattern is flexible because the core and non-core arguments are morphologically marked, with the exception of the subject argument. Thus, moving arguments around the clause does not alter the propositional meaning of the utterance, although it may change its pragmatics (Papa Coquinche & Rosales Alvarado 2015).

The three Kichwa participants seem to know most of the morphemes listed above. Participants KICH-1 and KICH-2, however, are in the process of strengthening the proper use of these suffixes. Note that the presence or absence of these morphemes can change the meaning of an expression in substantial ways. The example in (6a) was extracted from the story produced by KICH-1. It shows that this participant is learning to use the accusative *-ta*, the causative *-chi*, and the locative *-pi*. In the context of the story, (6a) is trying to make reference to the fact that the owner of the dog makes his pet happy. This is also inferred from the transitivizer *-ya* in the verb. But this example lacks the accusative marker *-ta* in *dog*, and the causative *−chi* in the verb. The target construction provided by the Kichwa specialist is given in (6b):

(6) a. Pay-pa   allku sumak-ta   kushi-ya-shka
        3SG.PRE-GEN dog   beautiful-ADVZR be.happy-TRS-PFV
        'His dog got happy beautifully' (Lit)

     b. Pay-pa   allku-*ta* sumak-ta   kushi-ya-*chi*-shka
        3SG.PRE-GEN dog-ACC beautiful-ADVZR be.happy-TRS-CAU-PFV
        'He made his dog very happy'

The following example was also produced by KICH-1. It shows that the verb has the necessary morphology of a finite verb. However, this participant used the instrumental marker *-wa* instead of the locative marker *-pi* to indicate that the bench is where the sitting takes place. The target construction is given in (7b).

(7) a. Chaymanda chay runa   shuk banka-*wa* tiya-ri-rka
        then   DEM person one   bench-INS sit-INC-PAS
        'Then that person sat with a bench'

     b. Chaymanda chay runa   shuk banka-*pi* tiya-ri-rka
        then   DEM person one   bench-LOC sit-INC-PAS
        'Then that person sat on a bench'

Participants KICH-1 and KICH-2 also show some inconsistencies with respect to preferred order of constituents. The speech sample of KICH-3 also shows some of

the same inconsistencies described above, but these are less frequent and mostly in the context of complex sentences.

One of the most salient morphological features of this language is the use of personal pronouns with the genitive marker *-pa* to express possession within the noun phrase. For example, in [*ñuka-pa yaya*] 'my dad', the first-person pronoun *ñuka* is marked by the genitive marker *-pa*. In spontaneous speech, however, fluent speakers tend to drop the genitive marker, and possession is expressed by word order alone. As a result, fluent speakers have two variant constructions for adnominal possession: [PRO-pa N] and [PRO N]. Participants KICH-1 and KICH-2 are able to use the first variant, with the genitive marker. However, KICH-3 already uses both variants, as shown in (8) and (9). Note that, in (8), the suffix *-pa* is missing in [*pay wasima*] 'at his house'. Thus, KICH-3 seems not only aware of the morphosyntactic variants but uses both of them effectively, which contributes to propel him towards the more advanced end of the proficiency continuum.

(8) allku pay-*pa* amu-ta   riku-sa *pay-pa* chupa-ta kuyu-ri-rka
     Dog 3SG-GEN owner-ACC see-MOD 3SG-GEN tail-ACC   move-INC-PAS
     'Looking at his owner, the dog moved his tail'

(9) wayu-kuna-ta apa-sa   ri-n   *pay* wasi-ma
     fruit-PL-ACC   carry-MOD go-3SG 3SG house-ALL
     'He goes to his house carrying fruits'

To form complex sentences, Kichwa employs subordinator suffixes, such as *-pi* to express 'temporal overlap', *-sha/-sa* to express 'manner', and *-nkapa* to express the purpose of the action conveyed in the main clause. KICH-3 uses all these complex structures, as shown in the following extract from a story produced by this participant. Subordinators are employed in (10b), (10c), and (10d). Participants KICH-1 and KICH-2 use mostly sequences of simple clauses, although they tend to join them using discourse connectors, as shown in (11), below.

(10)   a. Mama rima-n   pay-pa wawa-kuna-ta:
          mother speak-3SG 3SG-GEN son-PL-ACC

       b. "maska-kri-sha   wayu-kuna-ta kan-kuna-ta kara-*nkapa*."
          look.for-go-1SG.FUT fruit-PL-ACC   2SG-PL-BEN give-PUR

       c. chasna rima-*pi*,   pay-pa mama puri-*sa*   sacha-man
          like.this speak-TEMP 3SG-GEN mother go.around-MAN jungle-ALL
          ri-n,
          go-3SG

    d. sacha-pi   puri-*pi*   tupa-n mishki muyu-kuna-ta
        jungle-LOC go.around-TEMP find-3SG sweet   seed-PL-ACC
        '(a) Mother speaks to her sons. (b) "I'll go look for fruits in order to give you (to feed you)". (c) Speaking like this, mother goes walking around towards the jungle. (d) When she was walking around in the jungle, she found sweet seeds'

6.4.3 Discourse pragmatics

At the discourse level, there is a tendency to use connectors to link ideas conveyed in simple structures. This is particularly evident in the speech of KICH-1 and KICH 2. The extract below from a story by KICH-1 shows this. The frequent use of *chaymanda* 'then' and adverbs of time such as *washa* 'then, later' is noticeable, as in (11a) and (11d). This speaker seems to be using connectors instead of subordinators to link clauses.

(11)   a. Pay-pa amu   wawa hampi-naya-shka
           3SG-GEN owner kid   cure-DES-PFV

      b. chay allku mana muna-rka
           DEM dog   NEG   want-PAS

      c. *chaymanda* chay runa   wan–chi-shka chay lumucha-ta
           then   DEM person die-CAU-PFV   DEM agouti-ACC

      d. wan-chi-shka *washa* pay-pa   wasi-ma   ri-rka
           die-CAU-PFV after   3SG-GEN house-ALL go-PAS
           '(a) His owner, the kid, wanted to cure him [the dog]. (b) that dog didn't want to. (c) then that person killed the agouti. (d) After killing, he went to his house.'

An important feature of Kichwa is the focalizer -*ka*. This marker operates at the level of discourse to explicitly highlight a piece of information about which one wants to draw attention. Focalization strategies are an interesting aspect in the learning process of heritage speakers. The only participant that makes use of this suffix is KICH-3; however, he makes an excessive use of the focalizer, as evidenced in (12) and (13). In sentence (12), three elements are focalized, in (13) four elements. Fluid, native speakers focus only one element per sentence.

(12) Sacha-pi   puri-pi-*ka*   allku-*ka* ña   mushti-sa-*ka*
     jungle-LOC go.around-LOC-FOC dog-FOC already smell-MAN-FOC
     kati-n   shuk sacha wiwa-ta.
     follow-3SG one   monte animal-ACC
     'When a dog goes around in the jungle, he chases a wild animal by
     smelling'

(13) wan-chi-ska washa-*ka*, ña   all-kuna-*ka* karachupa wawa-kuna-ta-*ka*
     die-CAU-PFV after-FOC   already dog-PL-FOC armadillo breed-PL-ACC-FOC
     wan-chi-pi-*ka*   sakinaku-n
     die-CAU-TEMP-FOC leave-3SG
     'After killing the armadillo's babies, the dogs leave them dead'

Participants KICH-1 and KICH-2 do not employ the focalizer marker. In sum, some areas of pragmatics pose significant challenges for heritage learners of both Kichwa and Kukama.

7 Implications for instruction of heritage languages in Amazonia

The aim of this study was to explore how much heritage speakers can achieved in the process of relearning their ancestral languages in higher education programs. An examination of the use of Kukama and Kichwa as a response to audiovisual stimuli by eight FORMABIAP alumni reveals that heritage languages can be relearned in the context of formal education, as long as other forces and context dynamics are present as well. Overall, all the Kukama and Kichwa heritage speakers in this study demonstrated strong comprehension skills and have also achieved varying degrees of production skills. Speakers show some patterns from beginners, to intermediate levels, to quite advanced proficiency.

In addition, this study found that some features found in the speech of heritage speakers are similar to those found in the speech of elder speakers, but there are also some distinctive emerging patterns. Some of them are listed in Table 4.

The findings in Table 4 are hardly surprising, as accelerated language change is expected in contexts of language endangerment and language revitalization (Hinton 2001, Vallejos 2016b). For example, speakers of Navajo (Athabaskan), recognize themselves as either traditionalists and non-traditionalists. The use of Navajo specialized vocabulary, as well as some structural features such as the hierarchy of classification of nouns (Hale 1973), is very rare among non-traditional speakers (Wayne et al. 2003). Another example comes from Blackfoot

Table 4: Some patterns identified in the speech of heritage speakers

Kukama	Kichwa
Phonetics and phonology	
Participants master most sounds, stress and intonation patterns	Participants master most sounds, stress and intonation patterns
Participants tend to produce the central vowel /ɨ/ as [i]	Participants apply some general phonological rules
Morphology	
Participants know a subset of postpositions and clitics	Participants know most case and tense suffixes
Participants use few pronominal gender indexicals	Participants are strengthening the use and combination of suffixes
Syntax	
Participants know basic declarative clauses and attempt interrogative constructions	Participants know basic declarative clauses and attempt different word order possibilities
Participants employ prosody to link simple clauses instead of clause subordinators	Some participants use clause subordinators, others use sequences of simple clauses
Discourse pragmatics	
Participants use personal pronouns for impersonal functions in narratives	Participants use focalizing strategies in narratives
Participants employ reported speech instead of direct speech	Participants focalize multiple pieces of information per clause instead of selecting only one

(Algonquian). There are two varieties referred to as Old or High Blackfoot, spoken by elders, and New or Modern Blackfoot, spoken by the new generations. Among the features found in High Blackfoot is the extensive use of incorporation; however, this pattern is no longer used by the Modern Blackfoot speakers (Miyashita & Shoe 2009). In the Amazon, Danielsen & Terhart (submitted) report several structural innovations among latent-speakers of Baure (Arawakan). Thus, it is important to document the progress made by these learners, as well as the innovations that might be emerging in their speech.

Given that languages are surrounded by variation and diversity, we do not believe language instruction should be restricted to achieve an abstract ideal of standard. Yet the findings of this study point to some areas that may need attention in terms of curricula development. Providing specific suggestions for heritage language instruction is beyond this paper, but the analysis provided here could be taken as a starting point for Kukama and Kichwa. For example, given the central role of orality in the life and social organization of the communities, facilitating greater exposure and practice of storytelling could help the progress of heritage learners. In addition, practical activities, such as the description of specific processes and concrete objects, activities with visual stimuli such as those used here, could help promote oral production and the expansion of vocabulary. The design of grammar instruction sessions aimed at overcoming difficulties with specific patterns, for example some of those listed in Table 4, seems desirable. Finally, the need to build a community of practice cannot be underestimated. Real interaction outside the classroom with those who speak the heritage languages is key to progress in the learning process.

Another important finding of this study is the positive attitudes shown by all the participants towards their identity and their heritage languages. To relearn a heritage language, particularly one with limited communicative functionality and prestige, motivation and commitment seem crucial. In addition, documenting progress is also important. Setting achievable goals, developing autonomy, and continuous self-assessment of learning are critical.

The assessment of heritage language learners should go way beyond language skills and explicit grammatical knowledge. A holistic approach must include also pragmatic knowledge, including the control of socio-cultural language norms, as well as awareness of linguistic variation in their communities. As indicated above, language attitudes and ideologies surrounding these languages, as well as learners' cultural connection with their ethnic group should be part of the picture as well. Finally, their political positioning with respect to their communities and indigenous organizations is also essential, especially in the context of the Peruvian Amazon.

8   Closing remarks

Language revitalization initiatives have been taking place in Latin American for some time now; however, the impact of such efforts in the creation of new speakers has not been documented thoroughly. There is a need to establish the baseline for each heritage language. This task requires detailed knowledge of each specific language, the sociocultural context, the demographic patterns of dialectal variation, etc. For Amazonian languages, this information is generally not available or systematized, and would need to be collected prior to a serious assessment of specific revitalization initiatives.

Given the degree of endangerment of the heritage languages involved, especially for Kukama and for some Kichwa villages, a significant finding of this study is that endangered languages can be relearned in well-structured instructional settings. We demonstrate that the outcomes of the methodology implemented by FORMABIAP are both tangible and substantial. The results reported here can help advance the discussion about model design and strategies to work with heritage languages within the classroom and beyond. One of the most important findings is the participants' commitment to their language, their community, and their indigenous organizations. They express a strong motivation to continue to learn their heritage language as they teach it to children. It should be clear by now that Kukama and Kichwa are not conventional second languages and should not be treated as such in higher education. What pedagogical challenges heritage learners of indigenous languages bring to the classroom is an important question, and we hope to have contributed to the start of this discussion with this study.

Acknowledgments

Abbreviations

ACC	accusative		MAN	manner
ADVZR	adverbializer		MS	male speech
CAU	causative		NZR	nominalizer
COM	comitative		PAS	past
DEM	demonstrative		PFV	perfective
INC	incoative		PRE	present
INT	interrogative		PUR	purpose
FOC	focus		TEMP	temporal overlap
FUT	future		TRS	transitivizer
LOC	locative			

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