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Participatory Action Research in Teotitlán del Valle Zapotec Language Revitalization

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Participatory Action Research in Teotitlán del Valle Zapotec Language Revitalization

by

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Committee in charge:

Professor Andrew Garrett, Co-chair
Professor Leanne Hinton, Co-chair
Professor Christine Beier
Professor Beth Piatote

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Abstract

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"How do you feel when you speak Zapotec?" According to some children who are learning Zapotec, an Indigenous language spoken in Teotitlán del Valle, Mexico, speaking Zapotec invokes feelings of pride. But not all learners feel this way, and children's feelings often vary depending on the specifics of a particular interaction. In this dissertation, I analyze how specific contexts and behaviors (of teachers, learners, parents, and other community members) increase or inhibit learners' investment in Zapotec language learning, and as a result, their Zapotec language acquisition and use. I employ a participatory action research (PAR) framework to analyze and evaluate children's participation in five Zapotec language workshops between 2017 and 2019 which I was involved in developing. Through examining the language use of Zapotec learners ages 4-16, it has become clear that language revitalization among children in Teotitlán is not simply about teaching children to speak Zapotec. Many children, based on observational data, already show the conversational Zapotec skills to participate in public discourse in Zapotec. Moreover, the barrier is not a lack of speakers with whom to interact, as Zapotec is spoken by about 4,000 residents and can be heard throughout the community. Rather, the issue stems from a misalignment between how children self-identify and how they perceive others to characterize them. Children want to position themselves as successful Zapotec learners and speakers but may be treated as unsuccessful speakers by others. This mismatch decreases learners' investment in using Zapotec in public spaces where the risk of misalignment between self-perception and others' perception is especially high. Addressing this misalignment—in Teotitlán and other communities engaging in revitalization—can mitigate learners' hesitance and promote language use.

In this dissertation, I lay out the theoretical framework used in the study, defining PAR and what learner investment means in this context (chapter 1). I then use reported language use data to describe the current status of Zapotec language use in Teotitlán (chapter 2). Through one-on-one interviews, I collected reported language use data from Zapotec learners and their parents. The interview data suggest that language shift from Zapotec to Spanish is underway, particularly among the youngest generation. However, this shift towards Spanish is not universal, and within some families and contexts, Zapotec remains robustly used.

How, then, can language revitalization initiatives be effectively implemented to further promote language use? In chapter 3, I lay out a set of factors affecting language revitalization implementation and outcomes in diverse contexts. This chapter aims to provide support to people interested in carrying out language revitalization programs by providing a framework to help identify strategies for language promotion that may be effective in a specific context. In chapter 4, I illustrate, using the Zapotec workshops as a case study, how these factors were considered in the development of a specific revitalization initiative. I also describe a sample lesson plan and key teaching strategies and learning activities used in those workshops.

To evaluate whether the language workshops had any impact on Zapotec language use among learners, I also collected data on observed language use through naturalistic recordings and participant observations (chapter 5; in referring to 'naturalistic' environments, I simply mean to say environments that are more likely to be found even when the workshops are not being held). While these data—like the reported language use data—suggest that there has been a shift towards Spanish among children in Teotitlán, children's recordings also reveal that learners *are* able to use Zapotec: children can be heard performing Zapotec dialogues, singing Zapotec songs, and practicing exercises like counting and naming animals in their recordings. Although Zapotec may not regularly be used between most children or between most children and adults in Teotitlán at present, these performances suggest that kids were at times interested in using Zapotec and that they do have some Zapotec language abilities. Furthermore, parents can be heard in some recordings encouraging their children's Zapotec use, and in some instances, children responded with a code-switched utterance, using mostly Spanish but incorporating Zapotec words or phonological patterns. These behaviors show promise in the children's openness to using the language. In addition, in all instances that I analyzed where children used Zapotec—even if it was simply one word within an otherwise Spanish utterance—parents responded in Zapotec. This suggests that one crucial aspect of building sustainable language transmission is empowering Zapotec learners to begin conversations with adults in Zapotec using any Zapotec language skills that they may have.

In chapter 6, I provide a formal evaluation of the Zapotec workshops, incorporating evidence from *photovoice*, a methodology for collecting participants' opinions by inviting them to take photos representing their views on a particular topic. Finally, in chapter 7, I highlight which strategies used in the Zapotec workshops were most effective in the context of Teotitlán, as well as recommendations for best practices for language activists and revitalization practitioners in other communities who wish to leverage these tools for language promotion.

Resúmen en español

"¿Cómo te sientes cuando hablas zapoteco?" Según algunos niños aprendices del zapoteco, una lengua indígena hablado en Teotitlán del Valle, Oaxaca, México, hablar el zapoteco resulta en un sentido de orgullo. Pero no todos los aprendices se sienten así, y sus sentimientos suelen variar según los detalles específicos de las interacciónes en zapoteco. En esta tesis, analizo la manera en que los contextos y las acciones (de maestros, aprendices, padres, y otros miembros de la comunidad) aumentan o inhiben la *inversión de aprendices* (*learners' investment*; Norton Peirce 1995) en su aprendizaje del zapoteco, y como resultado, su adquisición y uso de la lengua. Analicé y evalué el uso de la lengua zapoteca entre los niños participantes de cinco talleres del zapoteco que ayudé a organizar durante los años 2017-2019. Examinando el uso de la lengua zapoteca por aprendices entre 4-16 años, se da cuenta que la revitalización de la lengua zapoteca entre niños en Teotitlán no sólo tiene que ver con enseñar a los niños a hablar la lengua. Según los datos de esta investigación, muchos niños ya tienen las habilidades necesarias para participar en los discursos públicos en zapoteco. Tampoco faltan hablantes con quienes los aprendices pueden interaccionar, porque el zapoteco se habla por aproximadamente 4,000 personas en Teotitlán y se puede escuchar la lengua de manera regular en el pueblo. Al contrario, la problemática resulta de una discordancia entre la auto-identificación de los niños y sus percepciones de como los demás les indentifiquen. Los niños quieren posicionarse como hablantes y aprendices exitosos de la lengua zapoteca, pero pueden ser tratados como hablantes no exitosos por otros miembros de la comunidad. Esta discordancia inhibe la inversión de los aprendices en utilizar la lengua zapoteca, especialmente en espacios públicos, en los cuales existe un riesgo elevado de discordancia entre la auto-percepción y las percepciones de los demás. Resolver esta discordancia—tanto en Teotitlán como en otras comunidades donde las lenguas se están revitalizando—puede mitigar la reticencia de los aprendices y promover el uso de la lengua.

En esta tésis, presento el marco teórico que utilicé en la investigación, incluso la metodología de la investigación de acción participativa y el significado de *la inversión de aprendices* en este contexto (capítulo 1). Utilizo información sobre el uso de lenguas recogida por entrevistas personales con los aprendices y sus padres, y por datos del censo nacional para describir el estátus actual del zapoteco en Teotitlán del Valle (capítulo 2). Los datos recogidos por las entrevistas sugieren un proceso de desplazamiento del zapoteco por el español, especialmente entre la generación más jóven. Sin embargo, este desplazamiento no es universal, y entre algunas familias y algunos contextos, el uso del zapoteco sigue con fuerza.

Entonces, ¿cómo se puede implementar de manera más efectiva iniciativas para fomentar el uso de la lengua zapoteca? En el capítulo 3, presento un marco teórico de los factores que pueden impactar la implementación y los resultados de iniciativas para revitalizar lenguas en contextos distintos. La meta de este capítulo es apoyar a la gente interesada en implementar iniciativas de revitalización; presento una guía para identificar las estratégias con mayor probabilidad de éxito según el contexto específico. En el capítulo 4, utilizo el caso de los

talleres del zapoteco para niños en Teotitlán como un modelo de como se consideraron estos factores en el desarrollo de esta iniciativa de revitalización en particular. También describo en detalle una sessión del taller y una selección de los estratégias claves de enseñanza y aprendizaje que se utilizaron en los talleres.

Para evaluar si los talleres del zapoteco resultaron en algún efecto sobre el uso de la lengua zapoteca entre los aprendices, también hice observaciones del uso de la lengua a través de grabaciones naturalistas de los niños y la observación participante (capítulo 5; en llamar a las grabaciones 'naturalistas,' quiero decir que tratan de ambientes que se puede encontrar aún cuando no hay talleres). Aunque estos datos—igual como los reportes del uso de la lengua obtenidos por las entrevistas—sugieren que hay un desplazamiento hacía el español entre los niños, las grabaciones también muestran que los niños sí pueden utilizar el zapoteco: en sus grabaciones, se puede escuchar a los niños cantando en zapoteco, presentando diálogos, y ensayando ejercicios como contar y nombrar animales. Aunque parece que los niños no utilizan el zapoteco de manera regular ni entre sí, ni con los adultos en Teotitlán, el zapoteco que aparece en las grabaciones sugiere que a los niños por lo menos a veces les interesan el uso del zapoteco, y también que los niños tienen por lo menos algunas habilidades en la lengua. Además, se puede escuchar a los papás en algunas grabaciones promoviendo el uso del zapoteco con sus hijos, y en algunas instancias, los niños contestan con una frase mayormente en español pero con palabras o fonología del zapoteco. Esta conducta sugiere que los niños están abiertos al uso del zapoteco. Además, en todas las instancias que analicé en las cuales los niños usaron el zapoteco—aún si fuera solo una palabra dentro de una frase en español—los papás respondieron en zapoteco, lo cual sugiere que un aspecto importante en fomentar transmisión sostenible de la lengua zapoteca es empoderar a los aprendices del zapoteco a empezar a conversar con adultos en la lengua con cualquier habilidad que tengan.

En el capítulo 6, presento una evaluación formal de los talleres del zapoteco, incorporando evidencia de *photovoice*, una metodología por juntar las opiniones de participantes a través de fotos que los participantes toman para representar sus ideas con respeto a un tema. Finalmente, en el capítulo 7, indico cuales de las estratégias que utilizamos en los talleres fueron las más eficaces en el contexto de Teotitlán, junto con recomendaciones por prácticas adecuadas para los activistas de lenguas y los practicantes de revitalización de lenguas en otras comunidades quienes quieran utilizar estas herramientas en promover una lengua.

I would like to acknowledge that this work was carried out at UC Berkeley, which stands on the unceded land of the Muwekma Ohlone people. I recognize that I have greatly benefitted from the use and occupation of this land.

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Chapter 1

Introduction

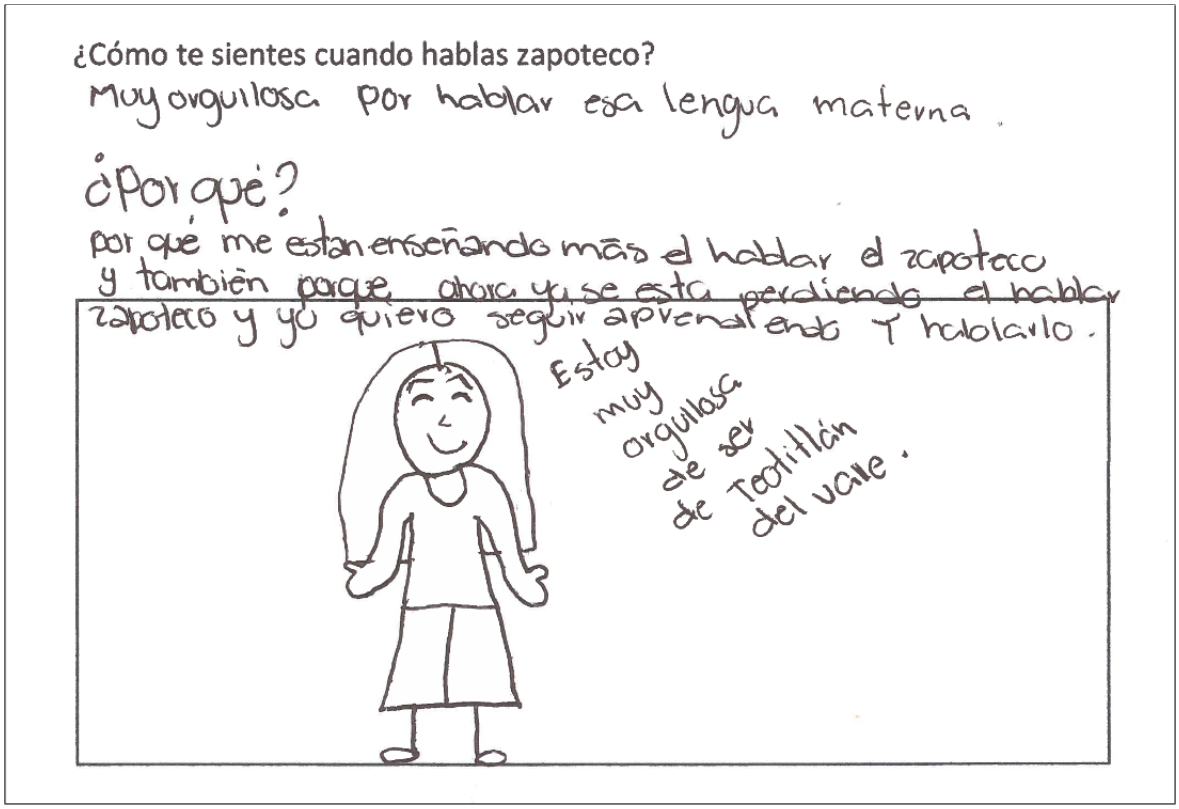

Figure 1.1: Zapotec learner's reflection on feelings evoked by speaking Zapotec. The text reads (in Spanish, translation mine), "How do you feel when you speak Zapotec?" "Very proud to speak this mother tongue. Why? Because I'm being taught more of the language, Zapotec, and also because now the Zapotec language is being lost and I want to continue learning and speaking it. I'm very proud to be from Teotitlán del Valle."

1.1 Purpose of this study

"How do you feel when you speak Zapotec?" According to some children who are learning Zapotec, an Indigenous language spoken in Teotitlán del Valle, Mexico, speaking Zapotec evokes feelings of pride, as shown in figure 1.1. But not all learners feel such a sense of pride or happiness associated with Zapotec language use, and children's feelings often vary depending on the specifics of a particular interaction: Who are they speaking with? Where is the conversation taking place? What are they talking about? How is the interlocutor responding to the child's use (or nonuse) of Zapotec?

In this dissertation, I analyze the ways in which specific contexts and behaviors (of teachers, learners, parents, and other community members) affect learners' emotional states and self-perceptions, increasing or inhibiting learners' investment in Zapotec language learning, and as a result, their Zapotec language acquisition and use. Though Zapotec continues to be used throughout Teotitlán and is spoken by more than half of the population (INEGI, 2020), as in many minoritized language communities around the world, there is evidence of an intergenerational shift towards the national lingua franca (in this case, Mexican Spanish). As a result, language activists from Teotitlán, Mexico, and abroad have initiated a network of activities to promote and revitalize the Zapotec language (section 4.2). These activities range from linguistic documentation, to the creation of orthographies and language classes, to campaigns to raise awareness about the equal status of Indigenous languages throughout Mexico. While each of the initiatives may target different populations and have different specific goals, they complement one another in their promotion of greater respect for and use of Zapotec in Teotitlán, highlighting the desire of many Teotitecos that the Zapotec language remain in use throughout the town.

This dissertation focuses on the development, implementation, and results of one of these Zapotec language revitalization initiatives, in which I was particularly involved: periodic Zapotec language workshops for kids, hosted from 2017-2019.[1,2] The workshops were targeted for learners ages 5-12 and involved both language learning in a classroom environment and field trips to interact with Zapotec speakers in naturalistic environments, which I define as environments that are likely to be found even when the workshops are not being held (such as purchasing goods from the market, talking with vendors in shops, weaving, or planting corn—activities that are common in Teotitlán and that adults often carry out in Zapotec). Workshops lasted between two and three weeks, with sessions of approximately two hours each either daily or every other day and were co-facilitated by Licenciada Rosita Jiménez Lorenzo (a speaker of Zapotec from Teotitlán) and me.[3] Beginning in fall 2018, the program was developed, iteratively implemented, and assessed following a participatory action research framework (PAR, defined in section 1.2), which aims to involve all stakeholders

[1] I define 'language revitalization' in section 3.1.1.

[2] More language workshops were planned for 2020 and beyond, but at the time of writing such plans have been postponed due to the COVID-19 pandemic.

[3] A brief overview of the workshops is provided in section 1.4 and a detailed description is provided in chapter 4.

equitably as active participants throughout the process.

Using the example of the Zapotec language workshops as a case study, I argue (following Henderson, Rohloff, and Henderson 2014; Hermes, Cash Cash, Donaghy, Erb, and Penfield 2016; Leonard 2012; and Zahir 2018) that language revitalization is about more than just gaining linguistic skills in using an additional language. Rather, language learners' dynamic sense of identity (section 1.3.1) plays a key role in establishing, maintaining, and increasing learner investment (section 1.3), as learners are motivated to be part of a community of language learners and language users when they feel that their identities are seen and respected. In illustrating how the Zapotec workshops were designed and iteratively implemented, I highlight specific actions that were taken in an attempt to foster learner investment, as well as the outcomes of those actions.

It is my goal that this dissertation will serve as a useful launch point for language activists interested in implementing new language revitalization initiatives or (re)evaluating and redesigning existing initiatives. To that end, after presenting an overview of reported language use in Teotitlán to provide context for this case study (chapter 2), I present a set of factors to consider in designing language revitalization initiatives (chapter 3) and specify how these factors influenced the design of the project in Teotitlán (chapter 4). As much as possible, I attempt to describe how situations in which any of these factors are different might result in different outcomes. With the set of factors (and the parameters of variation that might be expected in different communities) presented in chapter 3, I hope to provide the reader with a structured set of considerations that can be used to facilitate conversation between a diversity of stakeholders (including parents, children, educators, and other community members) as they design a language revitalization initiative.

Furthermore, I describe key interactions involving learners in the Zapotec language workshops and provide an analysis of the ways in which the design of activities, the implementation of feedback, and the discussion among participants facilitated or inhibited the establishment of a safe learning space where students felt comfortable *using* Zapotec (chapter 4). I examine Zapotec *use* (to quote Zahir 2018) "because this is what will necessitate the learning. Learning does not necessitate language use" (p. 159). I focus on illuminating the motivations behind specific choices and how they facilitate learner investment so that readers can understand these underlying motivations in order to apply them in other contexts, hopefully resulting in positive outcomes.

But of course, the language workshops are only a small fraction of the lives of children learning Zapotec. In order to understand the full extent of children's Zapotec language abilities and the scope of language shift towards Spanish among children in Teotitlán, it is also important to understand the ways in which children are (or are not) using Zapotec outside the language revitalization classroom. To address this question, I gathered data on reported language use (from children and their parents; chapter 2) alongside naturalistic, long-format speech-environment recordings (LFSE; chapter 5). I discuss the ways in which perceptions of language use and actual language use do not always align for participants in this study, as well as analyze the importance of context in moulding a child's language choices (chapters 2 and 5). While each child is unique, one pattern that emerged is that children

in general tended to display a greater quantity of Zapotec use (including a wider range of linguistic abilities) in more private contexts. This finding makes the work of supporting learner investment all the more important: if the goal is for children to grow up and use Zapotec throughout the community—both in private and in public spaces—it is crucial for children to be supported in using Zapotec publicly.

Overall, this study shows that it is not simply the case that children need to learn to speak Zapotec; many (though not all) children—based on their linguistic performances in private spheres—already show that they have the Zapotec language skills to participate in public discourse in Zapotec (section 5.3). Nor is it the case that Zapotec learners need speakers with whom to interact, as Zapotec can be heard at community meetings, in the market, and between individuals passing one another on the street throughout the town. Rather, the issue stems from a misalignment between how children self-identify and how they perceive others to characterize them. Children want to position themselves as successful Zapotec learners and speakers but may be treated as unsuccessful speakers by others (section 3.5.1). This mismatch decreases learner investment and motivation to use Zapotec in public spaces where the risk of misalignment between self-perception and others' perception is especially high. Addressing this misalignment—in Teotitlán and other communities engaging in revitalization—can mitigate learners' hesitance and promote language use (chapter 6).

While this dissertation presents a specific case study and focuses on the unique opinions and behaviors of a small set of Zapotec learners and their families during the two-year time period from 2017 to 2019, the underlying principles that have led to positive outcomes for language learners may prove useful in new contexts, particularly in contexts where PAR is also employed so that a diversity of stakeholders can voice their opinions and share their experiences on how particular recommendations may or may not prove effective in a new context. Ultimately, the success of PAR and of the Zapotec language workshops rely on the same core principles: all involved must be heard, must be recognized, and must be respected for who they are in all their complexity. Through the establishment of mutual respect and creation of a sense of community, young Zapotec learners have become invested in their learning and are moving towards a future with increased Zapotec language vitality.

In what follows, I define two main ideas that are essential for contextualizing this dissertation: PAR (section 1.2) and learner investment (section 1.3). I then present a brief overview of the Zapotec language revitalization program that is presented as a case study in this dissertation (section 1.4), along with my own personal background as a researcher and participant in the program (section 1.5), before providing an outline of the remainder of the dissertation (section 1.6).

1.2 Participatory action research (PAR)

As will be further discussed in chapter 3, designing and implementing language revitalization programs is not always straightforward. In addition to the importance of understanding why language shift may be underway and why individuals hope to reverse it (section 3.1) and

considering factors about the specific language environment in question (section 3.2), there may be a diverse set of stakeholders (section 3.3) who are interested in related but distinct goals. Furthermore, stakeholders are not always able to identify or effectively express their underlying goals at the beginning of a project, as complicated ideologies and pressures may influence what stakeholders consciously understand about their own motivations as well as what they feel comfortable expressing to others (Dauenhauer & Dauenhauer, 1998).[4]

Given these obstacles, one methodology that is attractive is participatory action research (PAR). There are many related definitions of PAR. For instance, Chevalier and Buckles (2019) describe PAR as "Participation (life in society), Action (experience), and Research (knowledge making)" (p. 14), and Kidd and Kral (2005) describe PAR as involving "understanding, mutual involvement, change, and a process that promotes personal growth" (cited in Savin-Baden and Wimpenny 2007, p. 331). I take a broad understanding of PAR as methods that stand in opposition to systems that "dehumanize science" (Chevalier & Buckles, 2019, p. 14). No matter the specific definition, this general set of PAR frameworks shares a set of similar difficulties and benefits (Chevalier & Buckles, 2019; Gaffney, 2008; Ozer, 2017; Savin-Baden & Wimpenny, 2007). Difficulties include ensuring all voices are heard, managing power and control, and navigating dynamic interpersonal relationships, while benefits include empowering minoritized groups, developing collective support, and strengthening relationships among youth and between youth and adults (Ozer, 2017, p. 175). In this work, I follow the definition of PAR provided by Whyte, Greenwood, and Lazes (1991):

> In participatory action research, some of the people in the organization or community under study participate actively with the professional researcher throughout the research process from the initial design to the final presentation of results and discussion of their action implications. Participatory action research (PAR) thus contrasts sharply with the conventional model of pure research, in which members of organizations and communities are treated as passive subjects, with some of them participating only to the extent of authorizing the project, being its subjects, and receiving the results. PAR is *applied* research, but it also contrasts sharply with the most common type of applied research, in which researchers serve as professional experts, designing the project, gathering the data, interpreting the findings, and recommending action to the client organization. Like the conventional model of pure research, this is also an elitist model. In PAR some of the members of the organization we study are actively engaged in the quest for information and ideas to guide their future actions. (p. 20)

I follow this definition for three main reasons: (1) the specification that *some* (not necessarily all) community members participate; (2) the fact that community members are invited to participate actively *throughout* the research process; and (3) the centering of *action* as a

[4]What 'they' or 'we' feel comfortable expressing to others. I consider myself a stakeholder in the Zapotec language workshops, and I envision that many readers of this dissertation would be included as stakeholders in revitalization projects as well.

central element of the research process. As discussed in more detail in section 3.3.1, allowing for the participation of *some* members of 'the community' is important because 'the community' may not have a united desire for involvement in a specific project. As any 'community' is composed of a set of unique individuals, those individuals may wish to pursue more or less similar goals through more or less similar means, and PAR allows for the possibility that a subset of a larger community will be involved in actively designing, implementing, and evaluating a program that a larger community may be invited to participate in. I should clarify here that the involvement of *some* community members is not to say that other community members are excluded, but rather to provide space for community members to freely decide whether or not to participate as collaborators. This acknowledges that there may be individuals who wish to participate in a program or initiative as participants, but not as active collaborators and designers of that program (Crippen & Robinson, 2013). It is also possible that a subset of a larger community might be interested in pursuing a particular initiative, and other members of that community might be uninterested in such an initiative without opposing it. Particularly in a relatively large place like Teotitlán (with a population of over 6,300 people; INEGI 2020), it is important to appreciate that reaching consensus on one project among the whole population might not be possible or practical. Recognizing the internal diversity of a large community and working together as a group of individuals interested in a particular initiative or approach can be beneficial in these types of situations, both in allowing projects to move forward more quickly, and in refuting oversimplifications of complex communities that paint a picture that one perspective is shared by all community members.

At the same time, for those who do wish to be involved in an initiative, PAR specifies that participation should be *active throughout* the research process—from defining the research questions, to collecting data, to analyzing and presenting results. This conceptualization promotes equity by encouraging all individuals to contribute rather than setting aside certain aspects of a project that are reserved for experts in a particular domain. Of course, while in practice it may result that the input of domain experts is more often followed, PAR allows for all interested stakeholders to express their views and share their own expertise (whether it is or is not expertise specific to the domain in question) and for stakeholders to consider that input together before reaching a conclusion.

Finally, work on language revitalization is inherently connected to action towards social change, as successful language revitalization entails a change in social practices. For this reason, I find PAR to be a particularly relevant methodology, given its reliance on action towards positive social change as a key principle.

At the same time, I would like to highlight two issues with the definition provided by Whyte et al. (1991). First, the authors draw a false dichotomy between "professional researchers" and "people in the organization or community under study" (p. 20) Furthermore, their use of use "we" to refer to the reader along with the "professional researcher"—as distinct from the "members of organizations"— implying a researcher/non-researcher dichotomy and assuming that only "professional researchers" would be engaged in reading about PAR is troubling (see section 3.3 for a discussion of issues in categorizing stakeholders

into often overlapping categories such as 'community member,' 'linguist,' 'educator,' etc.). Of course, this inadequacy may be due at least in part to the fact that Whyte et al. (1991) were writing approximately 30 years before I am writing now, at a time when these issues were less widely discussed in the literature. Nevertheless, to overcome this problematic distinction I conceptualize these categories as 'roles' that are distinct from individuals. Under this conceptualization, those in the role of 'organization or community member' can be envisioned as collaborating with those in the role of 'professional researcher,' and it allows for the possibility that one individual may simultaneously occupy and carry out the duties of multiple roles. Nevertheless, I wish to point out that this interpretation is not necessarily apparent from the wording used by Whyte et al. (1991), and the dichotomous framing of professional researcher versus people in the organization or community under study has potentially negative impacts for individuals who identify as occupying both roles and thus may feel unincluded as a result of Whyte et al.'s (1991) wording. In this project, I apply the core idea of PAR as a collaborative research process in which all stakeholders—including individuals filling (often overlapping) roles as participants and researchers—can actively engage throughout the process of gathering information, making decisions, and implementing actions.

Second, some scholars have criticized Whyte for failing to reference Fals Borda, who had already been using the term "participatory action research" to describe his own work at the time Whyte's volume on PAR (Whyte, 1991) was published (Hall, 1992; Stoecker, 1999). Stoecker (1999) further claims that PAR is "less oriented to social change and closer to a more conservative action research model" (p. 842), as the role of power in the process of knowledge production is not made central (Hall, 1992, p. 17). Although, indeed, power is not mentioned within the definition of PAR provided by Whyte et al. (1991), in my work I have found that consideration of power structures can be compatible with PAR. As I will discuss throughout this dissertation (particularly in section 6.1.3), issues of power imbalances did arise during this project, and while power imbalances were not completely removed, they were addressed and ameliorated through inclusive discussion among various stakeholders, following the principles of PAR and deliberative democratic evaluation (defined in section 6.1.3).

PAR, as defined in this dissertation, can be situated as a participatory, action-oriented research methodology that contrasts with several other models of research discussed in the areas of linguistics and language revitalization specifically: ethical (or linguist-focused), advocacy, and empowering research. Czaykowska-Higgins (2009) (citing Cameron, Frazer, Harvey, Rampton, and Richardson 1992) defines "ethical research" as being "research *on*" social subjects, with the goals of reducing damage and inconvenience inflicted upon subjects, but where the goals of the researcher lead the work. "Advocacy research," in contrast is "research *on* and *for* subjects," where research is to be used to advocate for the wants and needs of subjects.[5] "Empowering research" takes this advocacy further and requires

[5]This is similar to what Whyte et al. refer to as "applied research". For example, a researcher might use their privilege as a perceived expert in the field to argue that a particular language variety is in fact a

"*research on, for and with*" community members, whereby collaboration with community members must also include training those community members in research practices so that they may carry out the work more independently. However, as Leonard and Haynes (2010) note, even this empowerment model does not specify how collaboration regarding setting the research agenda will be worked out, nor does it exclude the possibility that previous power dynamics will either be maintained or simply reversed, and that equitable participation will not be achieved.

PAR—in contrast to ethical, advocacy, and empowering research models—sits within a family of research methodologies that generally center the participation of diverse stakeholders and the achievement of action-oriented results. These include Action Research (AR), Participatory Research (PR), Community-Based Research (CBR), and Community-Based Language Research (CBLR), for example. This family of methodologies stems from the work of thinkers like Freire (2000), who focus on research that centers the needs of community members (Siekmann et al., 2019). These methodologies are consistent with larger projects such as Community-Engaged Scholarship or Publicly Engaged Scholarship, under which PAR may constitute a specific approach used to carry out engaged research (Gordon da Cruz, 2018). I follow Fals-Borda (1992) in highlighting the similarities between these approaches (particularly between PR and PAR) rather than the differences.

I would like to highlight some models—specifically Community-Based Language Research (CBLR) (Czaykowska-Higgins, 2009) and "truly collaborative research" via "collaborative consultation" (Leonard & Haynes, 2010)—that have been proposed within the linguistics literature specifically and show how they are consistent with the PAR approach. As noted above, I have chose to employ a PAR framework because of PAR's emphasis on participation by *some* community members *throughout* the research process, along with a focus on working towards *action* for social change. However, I hope to show that using PAR in language revitalization is not a dramatic departure from previous research approaches within the field, but rather builds incrementally on other similar approaches.

Czaykowska-Higgins (2009) proposes Community-Based Language Research (CBLR), a model which shares a great deal with PAR. She defines CBLR as "research that is ***on*** a language, and that is conducted ***for, with,*** and ***by*** the language-speaking community within which the research takes place and which it affects" (p. 24). Although empowering and advocacy research models also involve collaboration among researchers and community members—always remembering that these two roles are in many cases overlapping—CBLR explicitly recognizes that researchers (such as linguists) are not the only experts involved in the research process. Rather, all participants bring their own expertise to a project.[6] Collaboration and sharing of knowledge must be equitable and multidirectional, with all participants sharing their unique insights and expertise. However, as Czaykowska-Higgins (2009) notes, "not all knowledge is equally valid or of equal consequence" (p. 26). She

language, and not a 'dialect' of the majority language.

[6]I understand all participants to have expertise in one or more areas. At the very least, I consider each individual to be an expert with respect to their own life experiences, which they may bring to and share to a project.

proposes that part of the CBLR process would ideally involve discussion of what types of knowledge are valid in a situation. While equitable and multidirectional sharing of expertise is not explicitly stated in the definition of PAR, it is consistent with successful implementation of PAR, which does require active participation from various stakeholders; if this "active participation" is to be meaningful, it must involve valuing the diverse perspectives of stakeholders. Furthermore, the CBLR model allows space for the overlapping nature of most individuals' roles within language revitalization, pushing back against an imagined 'researcher versus community-member' dichotomy and instead recognizing the multiple ways in which each participant is an expert in a relevant area.This may include an individual such as an academic researcher sharing their expertise in research and research methodologies, but it does not presuppose that this expertise will be relied on. Instead, stakeholders can discuss the value that such expertise might bring to the project and decide how to leverage that expertise in a way that meets community needs.

Czaykowska-Higgins (2009) notes the similarities between CBLR and other research models employed outside the field of language research (mentioning CBR, PR, and AR, but not PAR specifically), arguing that CBR is closest to CBLR. Both CBR and CBLR involve three key components, which are also compatible with PAR:

1. Collaboration between researchers and community members.

2. "Democratization of knowledge" (Czaykowska-Higgins, 2009, p. 25), meaning that a diversity of ways of knowing, building knowledge, and sharing knowledge are equally valued, rather than privileging certain types of knowledge (such as Western or 'academic' knowledge).

3. Achievement of social justice. Czaykowska-Higgins (2009) does not define *social justice* or describe what research that works towards social justice would look like (or what research it stands in contrast to). Reisch (2002) discusses several ways that *social justice* can be defined, noting that during the twentieth century "there was broad agreement in the West that a social justice paradigm must incorporate various means of achieving a fair distribution of societal goods—tangible and intangible" (p. 345). Following such a conceptualization of *social justice*, I consider any research whose goal is to move towards a more "fair" distribution of societal goods to be research that works towards social justice. Under this definition, research whose goal is to maintain or contribute to an unfair distribution of societal goods (whether tangible or intangible) would not contribute to social justice. However, determining what a "fair" distribution of societal goods would mean remains up for debate; for this reason, I focus on the intentions and goals of stakeholders in the research rather than on the actual effects of the research projects: if stakeholders seek to contribute to a "fair" distribution of societal goods, however they choose to define "fair," this can be considered research that works towards social justice under my definition.

The first component named as part of CBR and CBLR is also an explicit element of PAR: collaboration between stakeholders. The second component—'democratization of knowledge'—is not described in PAR as such, but I argue that it is compatible with, and even implied by, successful PAR. If PAR stands in contrast to "elitist" models of research as Whyte et al. (1991) describe, then the perspectives of all stakeholders should be considered and respected, no matter the traditions from which those different perspectives stem. Again, as Czaykowska-Higgins (2009) notes, this does not entail that all perspectives will be equally followed or applied. Some perspectives may be more useful within a given situation. What is crucial, however, is that participants *consider* alternative viewpoints. Finally in the third element, achievement of social justice, PAR stands with CBR and CBLR in its focus on *action towards social change*. This aspect of PAR is shared with other categories of "*applied* research" (Whyte et al., 1991, p. 20) in contrast with what Whyte calls "the conventional model of pure research" (p. 20). However, whether the research being carried out has as its goal only to observe and report, or to make a change (as in applied research), these can be carried out in an "elitist" way, according to Whyte et al. (1991, p. 20), if stakeholders beyond the "professional researchers" are not involved. Finally, Czaykowska-Higgins mentions that a fourth implicit aspect of CBR is that the research is practical and can be applied to improve social outcomes. CBLR can similarly be practical when it focuses on aspects of language such as language education and language revitalization, and PAR is explicitly practical in its call for a focus on positive action for social change.

In addition to the similarities between PAR and CBLR, PAR shares a number of features with the model of "truly collaborative research" via "collaborative consultation" laid out by Leonard and Haynes (2010), under which research involves equal consideration of the expertise and needs of researchers and communities. Consideration requires open and equitable communication, which is achieved through time and trust. Thus, both PAR and collaborative consultation require equitable collaboration between relevant stakeholders. While both CBLR and collaborative consultation methods explicitly acknowledge the importance of diverse ways of knowing that different stakeholders bring to a language research project in a way that PAR does not, the position is nevertheless compatible with and implied in PAR. Furthermore, the model of collaborative consultation seems to be compatible with research that works towards social justice, though this is not stated explicitly. What is more explicit in collaborative consultation and PAR than CBLR is that research is not to be driven solely by the expertise of community members; non-community members who are experts in relevant areas are also seen as important—and equal—contributors to a project. The principles of collaborative consultation are represented in Figure 1.2, where it should be noted that the roles of 'researcher' and 'community' are considered to be non-exclusive.

Within language research generally, the principles of CBLR and collaborative consultation have notable benefits. However, since work on language revitalization is inherently connected to action towards social change, I find PAR to be a particularly relevant methodology due to its reliance on action towards social change as a key principle. While Czaykowska-Higgins (2009) notes that social change is a possible outcome of models like CBLR, and presumably "collaborative consultation," in the context of language research centered on

Figure 1.2: Model of truly collaborative research relying on "collaborative consultation" in language research (Leonard & Haynes, 2010, p. 288). In this figure, all of the circles are the same size, showing that all involved have equal access to designing the research project. This equal access is possible because of the mutual trust built up between different parties over time. The "trust" and "time" arrows go in both directions because the trust must be mutual between researchers and community members, and both researchers and communities must devote time to building relationships that will allow for open discussions of the research (Leonard & Haynes, 2010, p. 288).

questions of revitalization, I find that this aspect of working towards social change is essential to recognize as part of the research methodology, as occurs in PAR.

I conceptualize PAR implementation in this project as is illustrated in figure 1.3. Following the definition in Whyte et al. (1991), PAR involves the participation of *some* of the people in the organization or community. In figure 1.3, this is illustrated by the yellow sunbursts which represent different stakeholders. In the figure, a wide array of stakeholders bring their expertise and needs to one or more projects that they feel motivated to participate in, without an obligation to participate in all of the projects. The rays of the sunbursts that point out from each stakeholder represent influence and participation, as each stakeholder can influence and participate in a variety of projects (represented by blue ovals) to a greater or lesser extent depending on how closely or loosely associated the stakeholder is with a particular project. This is related to the focus on equity, rather than equality, in PAR. Equity focuses on the fact that individuals may have different needs, and as a result people may be treated differently in order to ensure fairness. This contrasts with equality, which instead focuses on treating people the same regardless of need. In addition to this focus on equity, all of the work is underpinned by allowing trust to develop over time to improve open communication between stakeholders. Moreover, multiple projects of different sizes and shapes are represented as a way to highlight that language revitalization does not require the identification and implementation of one single project, but rather can benefit from the implementation of a network of different projects that all contribute to language

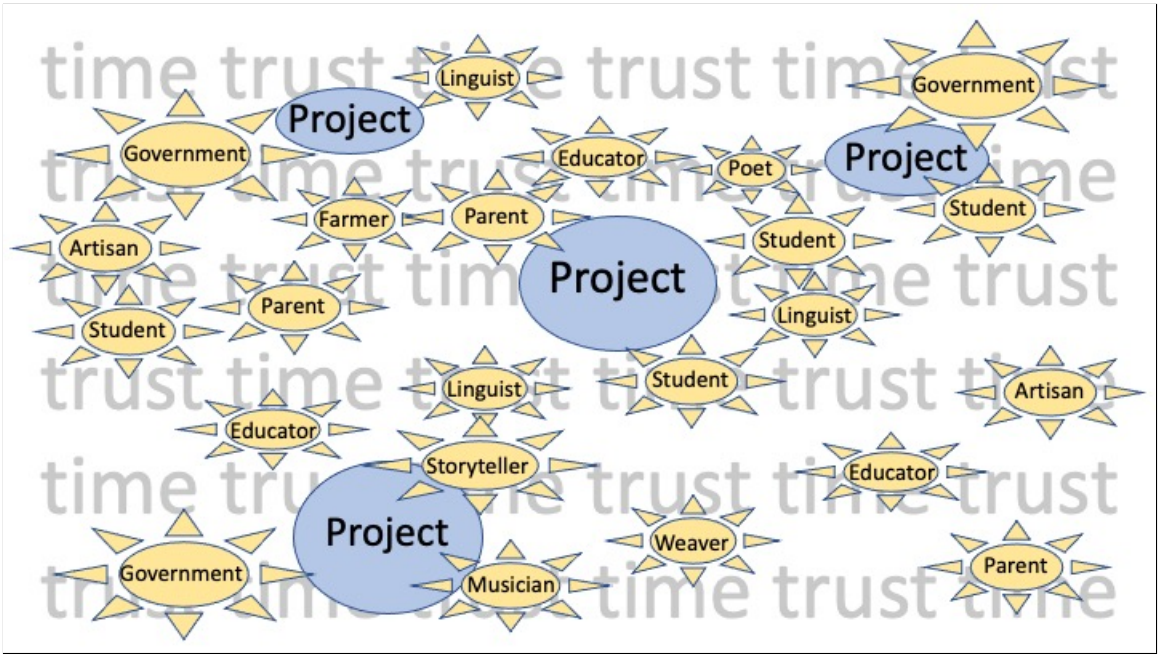

Figure 1.3: Model of collaboration between diverse stakeholders with varying amounts of commitment to different projects, but sharing a sense of trust built up over time. The blue circles represent the multiple projects that may be taking place within a community; their different sizes represent possible differences in scale between projects. The yellow sunbursts represent different stakeholders, who may be more or less involved (represented by their distance and size) from different projects. All of this work is underpinned by a sense of shared trust between stakeholders built up over time, represented by the gray 'time trust' text in the background. I present time and trust as linked and permeating all of the projects and stakeholders, and serving as a background or foundation for revitalization work.

revitalization in different ways. Instead of presenting language revitalization in a context of scarcity (by prioritizing the identification of one single 'best' initiative for a given situation), this model centers abundance and encourages stakeholders to imagine a multiplicity of initiatives with their own strengths and weaknesses.

Beginning in winter 2018, PAR was used as a methodological framework for thinking about the design, implementation, and evaluation of the Zapotec language workshops for children.[7] The iterative process used in developing and evaluating the language revitalization program is illustrated in figure 1.4. While I became the organizational lead for the project during the period from 2017-2019 presented in this study, I attempted to collaboratively create as much space as possible for the diversity of stakeholders with interests in the project to voice their opinions and shape the project throughout the process. This resulted in focus

[7]See section 6.1.1 for a discussion of the differences between *evaluation* and *assessment*.

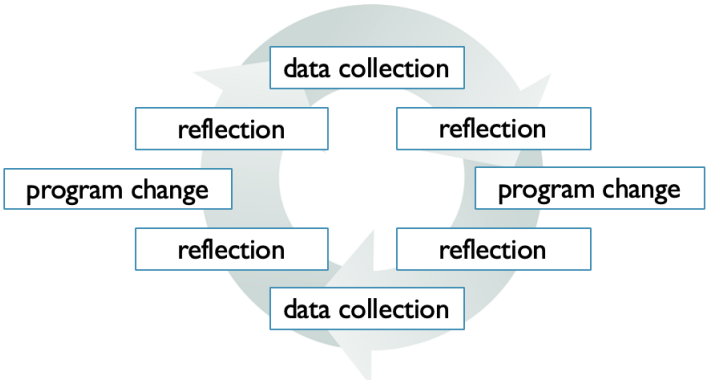

Figure 1.4: Participatory action research implementation model for Zapotec language workshops for kids in Teotitlán. This highlights the process followed by stakeholders (myself included) of (1) *reflection* on how the program was working and decisions on what additional data were needed to effectively evaluate and improve the program, (2) *data collection* based on that reflection, (3) *reflection* on what the data suggest could be improved in the program, (4) *program change* based on the reflections, and repeating the process.

groups with children and parents; one-on-one conversations between myself and learners, parents, and community leaders including other language activists, school teachers, and public officials; surveys about language attitudes and feedback on the language workshops; and community-building events hosted through the workshop during which participants and their families discussed ways forward for Zapotec language revitalization in Teotitlán. While the implementation of PAR in this project was undoubtedly imperfect, I believe that great progress was made in bringing together stakeholders in spaces where they felt comfortable sharing their thoughts and working towards an implementation of a program for Zapotec language workshops for kids that serves the community of learners, and I imagine that as this project continues into the future, the stakeholders (myself included) can continue to build this community, increase communication, and continue improving language revitalization initiatives so that they better fit with the needs of the community of learners that they serve.

1.3 Learner investment

In order to achieve success in language learning and language revitalization, it can be useful to consider not only motivations and goals at the level of a group—such as members of a family, participants in a language revitalization initiative, or residents of a town like Teotitlán—but also to consider the motivations and goals at the individual level. While PAR aims to allow each individual to voice their own goals, the ultimate goal of PAR is to move forward in a direction that is beneficial not just for one community member, but for the group as a

whole. But at the same time, any group is made up of a set of individuals, and it is useful to consider ways that specific individuals may come to feel more or less connected to a language revitalization initiative and, as a result, more or less likely to successfully engage with and acquire the language. In this section, I summarize the concept of *learner investment* (Norton Peirce, 1995) and discuss how it may relate to what I have observed among Zapotec learners and Zapotec users in Teotitlán.

Learner investment is a concept developed by Norton Peirce (1995) and concisely defined by Pavlenko (2001) as the "complex, socially and historically constructed and dynamic relationship of the learners to the target language and their sometimes ambivalent desire to learn and to practice it" (p. 294). The idea of learner investment centers an understanding of learning as being socially situated (Lave & Wenger, 1991; Ochs, 1993; Pavlenko, 2001; Wenger, 1998). Success in language learning does not rely only on aspects of the language learner, but also on the environment in which that learner is situated. For example, a learner may be motivated to learn and may have opportunities to interact with speakers of the target language, but if speakers are uninterested or refuse to interact with the learner in the target language, the learner will not be able to practice and to acquire the target language. Darvin and Norton (2015) exemplify this crucial difference between *motivation* (an internal property of the learner) and *investment* (which emerges relative to a learner embedded in a social context):

> In addition to asking, "Are students motivated to learn a language?" one asks, "Are students and teachers invested in the language and literacy practices of a given classroom and community?" For example, a student may be a highly *motivated* learner, but may not be *invested* in the language practices of a given classroom if the practices are racist, sexist, or homophobic. (p. 37)

Thus, focusing on learner investment forces us to consider learning as one part of a larger ecosystem of pressures and relationships. Negative learning outcomes, then, do not necessarily reflect a lack of motivation or other negative qualities that can be assigned to a language learner alone; the responsibility for low learner investment may be shared with others participating in the learning process. Pavlenko (2001) highlights how a consideration of the full range of factors influencing learning better reflects what a learner faces; while other approaches focus on features of the learner, "in reality, however, no amount of motivation can counteract racism and discrimination, just as no amount of positive attitude can substitute for access to linguistic resources such as educational establishments, work places, or programmes and services..." (p. 281). Even if a learner is highly motivated, if the community of speakers persists in treating that learner as an outsider and fails to speak with the learner, the learner will not be able to become a part of the speaker community.

The idea of learner investment is particularly useful in the language revitalization context in Teotitlán. While many children are highly *motivated* to learn the language, the social situations in which they find themselves can have profound effects on their *investment* and, ultimately, on the extent to which they acquire and use Zapotec. Learners are not always

accepted as successful users of Zapotec; sometimes, their attempts at Zapotec language use are criticized, at which point their identity as Zapotec individuals can also be called into question alongside their language use. When learners' attempts to use language are not accepted by the community that they want to be associated with, they may pull away from language learning and seek other ways of developing connections to a community where their identities are seen and respected. In the following subsections, I discuss three elements—identity, ideology, and capital (Darvin & Norton, 2015)—that are particularly influential in determining learner investment, and I will show how they connect to language revitalization specifically.

1.3.1 Identity is dynamic

Learner investment relies upon the notion that individuals' identities are dynamic, an idea based on poststructuralist approaches to language learning and language use (Norton Peirce, 1995; Pavlenko, 2001; Wenger, 1998), and supported by sociolinguistic theories that conceive of identity as socially constructed through interaction (Bucholtz & Hall, 2004, 2010; Deckert & Vickers, 2011; Drummond & Schleef, 2016; Eckert, 2012; Ochs, 1993). I follow Norton (2016) in defining *identity* as "the way a person understands his or her relationship to the world, how that relationship is structured across time and space, and how the person understands possibilities for the future" (p. 476). Identities, under this definition, are shifting and may change over the lifespan and as a result of social interactions (Bucholtz & Hall, 2004, 2010; Deckert & Vickers, 2011; Drummond & Schleef, 2016; Eckert, 2012; Norton, 2016; Ochs, 1993; Pavlenko, 2001). This stands in contrast to sociopsychological approaches (Gardner & Lambert, 1959, 1972; Schumann, 1978, 1986) that suggest an individual has "an essential, unique, fixed, and coherent core" (Norton Peirce, 1995, p. 15); under a sociopsychological approach, learners can be categorized as motivated or unmotivated or as members of one group or another. While learners may shift membership from one group to another, such a move is seen as complete and unidirectional; members join a new group by leaving another.[8]

Pavlenko (2001) notes the difficulty of applying these binary, non-overlapping categories in a multilingual or multicultural setting, where language learners are likely to be members of a number of different communities between which they shift and flow over time and space. Sociopsychological approaches were first developed with a focus on majority monolingual contexts, and were supported by studies examining immigrant populations' success in adopting the dominant language of their host country, often alongside the loss or disuse of their mother tongue. These studies connected successful acquisition of the target language to notions of "acculturation" or "integrative attitude" through which learners sought to become members of the target social group as well as learn the language (Pavlenko, 2001, p. 279). But such a shift to the target language alongside a loss of the mother tongue is rare when the

[8]More recent work allows for a greater degree of fluidity and change within *motivation* and draws a distinction between *motivation* as an internal property and *motivating* as a process through which a learner's motivation may change (Zareian & Jodaei, 2015). However, at the time Norton Peirce developed the idea of *learner investment*, the conceptualization of motivation was more fixed.

target language is a minoritized language; in most language revitalization contexts, learners are seeking to add the target language to their linguistic repertoire and are often members of multiple communities.[9] Under a poststructralist approach, learners can be understood to dynamically use language to shift, build, and reshape their identities (Bucholtz & Hall, 2010; Drummond & Schleef, 2016; Pavlenko, 2001).

However, learners' abilities to manipulate language in identity building is limited by their environment. While learners have agency and can use language to perform their chosen identities, their performances may not always be seen in the ways that they wish. They may be viewed through racialized, nationalized, gendered, or other lenses that limit the range of interpretations that will be afforded to their performance of identity (Alim, 2007; Flores & Rosa, 2015). Norton Peirce (1995), for example, illustrates how English language learners who are also immigrants to Canada attempt to perform identities as successful Canadians through use of English, but are instead positioned as incompetent. When learners encounter such situations in which performance of their desired identity through the target language is refused and they are forced into an unwanted identity, learner investment may be negatively impacted. While learners may be motivated to learn the target language and may wish to be accepted as part of the community of speakers, if they see that community members are hesitant or unwilling to accept their membership in the group, learners—even highly motivated learners—may turn away from language learning and use in favor of interacting with communities where their identities are perceived in the ways that they hope for.

In sum, language is used as a tool for the construction and contestation of identities. When language learners are able to project identities that are perceived by others in the ways that they had hoped to be perceived, learner investment is supported. When conflict between the learner's self-identification and their perceived identification by others arises, learner investment may decrease.

1.3.2 Investment is influenced by ideologies

In addition to identity, ideologies play a key role in shaping learner investment. *Language ideologies* are defined by Irvine and Gal (2009) as "the ideas with which participants and observers frame their understanding of linguistic varieties and map those understandings onto people, events, and activities that are significant to them" (p. 402).[10] On one level, ideologies shape understandings of what constitutes a 'language' and where boundaries that distinguish one language from another are drawn. They also provide a structure through which individuals may consider one language variety or another to be 'superior' or 'better

[9]It could be argued that early childhood immersion leading to the use of the minoritized language as a main language could be a case of such a shift to the minoritized language along with a loss of the dominant language, but I am not aware of cases where the ultimate goal of this type of immersion is to raise a monolingual adult; rather, monolingual children are introduced to the majority language at some point in childhood, and become bilingual (or multilingual) adults.

[10]See also Schieffelin, Kroskrity, and Woolard 1992, Silverstein 1979, and Woolard and Schieffelin 1994.

suited' to one purpose or another, or through which individuals develop ideas about the types of linguistic behaviors that are considered 'appropriate' in different situations.

In a language revitalization context, understanding what linguistic forms are considered part of the target language by members of a speaker community can be important to teaching and promoting those forms. In Teotitlán, for example, different subgroups of Zapotec language users have different opinions about whether loanwords adapted to Zapotec phonology from Spanish, such as *buur* (donkey, from Spanish 'burro') 'count' as part of the Zapotec language (or if they do 'count,' whether or not they are afforded the same status as words with Zapotec roots). These ideologies about language can also influence perceptions of language users: do speakers who use more loanwords, then, 'count' as Zapotec speakers on equal footing with speakers who use fewer loanwords? Who will determine what variety (or varieties) of the language is taught or promoted, and how will that decision be made? Understanding the ideas that are held by individuals engaging in the language revitalization process, as well as the by the individuals with whom they ultimately wish to converse, is crucial for designing a program that will lead to positive outcomes. Returning to the example of the Spanish loanword *buur* as an example, if a student uses *buur* as part of their Zapotec language production but a teacher or interlocutor rejects that word as successful Zapotec language production, this could discourage the learner's investment.

Even if there is agreement on what linguistic forms constitute Zapotec, there are also ideologies related to the status of Zapotec with respect to other language varieties. In many cases of language endangerment, individuals may adopt an "ideology of contempt" towards a language as a result of colonial and racist practices in which the minoritized language is seen as inferior to the dominant language (Dorian, 1998). Historically, Indigenous languages of Mexico were referred to as 'dialectos' ('dialects') and erroneously considered to be incomplete or incorrect forms of language that were inferior to the Spanish language brought by the colonizers. While this position has been discouraged (see section 4.2 for details), and it is much more common now to hear Teotitecos discussing Zapotec as a language with status much like that of Spanish, individuals often still have strong opinions about the contexts in which one language or the other is more appropriate or can more adequately express key concepts. Again, conflicting ideologies around the appropriateness of language in different contexts can impede learner investment. If, for example, a child wants to learn to sing popular songs in the target language but this is looked down upon by other community members, investment can be affected. The role of language ideologies in shaping language use is profound (Irvine & Gal, 2009; Kroskrity, 2006; Silverstein, 1979; Woolard & Schieffelin, 1994), and language revitalization projects will not be successful in the long run if the negative language attitudes that supported language loss are not addressed (Beier and Michael, 2018; Bradley, 2002; Dauenhauer and Dauenhauer, 1998; Hinton, 2001; cf. Roche, 2019a). In order to promote learner investment, having an understanding of the language ideologies held by learners, teachers, and speakers is essential, as conflicting ideologies about what the target language is, how it can or should be used, and how it relates to other languages can negatively impact learner investment.

In addition to ideologies about language itself, language revitalization may involve inter-

action with ideologies related to teaching and learning. Individuals may have strong opinions about which methods of language instruction are appropriate or effective in a given context, whether or not these perceptions align with documented outcomes. If teaching strategies that have been shown to be less effective (such as repetition of individual vocabulary items out of context) are used in tandem with a belief in their efficacy, learners who do not achieve their language learning goals may experience decreased investment in language learning. They expect the learning strategies that they are employing to allow them to learn the language, and when they do not achieve their goals, they may feel that their identities as successful language learners are in question, placing the blame on themselves rather than on the learning strategies that are being employed. Furthermore, learners', teachers', and community members' ideologies interact; when their expectations for one another align, learner investment benefits, but when they do not, learner investment can be negatively impacted.

1.3.3 Investment can be enhanced by cultural and social connections

Another factor that may lead to learner investment is the acquisition of cultural, social, or economic benefits as the result of language learning (whether directly or indirectly). Some scholars of language have drawn on Bourdieu's (1977; 1986) notion that language can serve as a form of symbolic capital (Bucholtz, 2006; Darvin & Norton, 2015; Eckert, 2000; Gal, 1989). Bourdieu (1986) proposes that capital is not limited to economic capital (derived from wealth and property), but also includes cultural capital (derived from knowledge and education) and social capital (derived from connections to others), and discusses how language acquisition may produce additional capital for learners. I wish to highlight that I am not claiming that investment is only enhanced through economic incentives. Rather, learners may be more invested when they see that they may derive social, cultural, or economic benefits from language learning. Learning a language involves the acquisition of cultural capital (the knowledge of the language) (Ahlers 2017; E. Cohen and Allen 2012; Darvin and Norton 2015; Davis 2015). For example, Davis (2015) describes her experiences with the Chickasaw Nation, in which she observed that while knowledge of English provided greater access to economic and cultural capital through allowing access to "dominant American culture," Chickasaw language skills were deemed valuable as "objectified cultural capital" and individuals with Chickasaw language skills were endowed with honors and respect within the community (p. 5). Darvin and Norton (2015) also assert that learning a language can additionally help individuals to acquire social capital through integration into a network of language speakers and access to positions of power within a community. This can also be seen with Chickasaw language speakers: Chickasaw language knowledge is one of many ways in which individuals may be defined as having central membership within the Chickasaw community, and it confers high status, as reflected in the honors awarded to speakers as well as the inclusion of "language teacher" among a list of careers with high social capital (Davis, 2015, p. 6). Furthermore, language may provide access to economic capital through increased

employment opportunities (Darvin and Norton 2015; Davis 2015).

In language revitalization contexts, the exact types of capital that learners may aim to acquire may differ from other contexts (such as 'foreign' or majority language learning contexts), though many of the motivations are overlapping.[11] While a minoritized language may not always provide economic capital to a language learner (perhaps there are no additional employment opportunities for those who speak the language), there are certainly cases where it can. Translators are increasingly required in hospitals and government offices to successfully serve speakers of minoritized languages, and the growth of cultural tourism has also provided a demand for multilingual and multicultural individuals to work in the tourism sector. At the same time, these different opportunities may also require different linguistic skills: translating medical terminology will require a very different set of language skills than teaching a group of foreigners basic greetings in a language. Alignment between learning that facilitates the type of capital gains that learners seek can improve learner investment.

It is also important to remember that capital is not static, but shifts through time and space.[12] Minoritized language learners may need to navigate multiple social contexts where the worth of their capital (including the cultural capital they build through language learning) varies. For example, members of a language community might highly value even apparently symbolic use of a language, while 'experts' such as linguists or educators may disregard, misinterpret, or ignore such apparently symbolic uses of language (Ahlers, 2017, p. 41). Even within a community of speakers, different subgroups may place greater value on different aspects of the language. In Teotitlán, for example, some speakers place a high value on the ability to write in Zapotec, others on performing speeches, and others on engaging in casual conversation with elders. Moving outside of the speaker community, a learner might interact with majority language speakers within their town, state, and nation; these majority language speakers may or may not value the skills a learner has in a minoritized language.

Furthermore, learners do not begin as "empty vessels" without any cultural or social capital (Darvin & Norton, 2015, p. 45), but rather they bring with them a set of resources—including the linguistic skills that they already possess, their social connections, and their material resources—that can then be leveraged in the context of language learning. However, given that capital is situationally dependent, the capital resources that a language learner brings may vary across contexts. Nevertheless, educators and others involved in language revitalization can promote learner investment by reconsidering the value assigned to learners' existing capital. Instead of disregarding the knowledge that learners bring, that knowledge can be brought into conversation and built on throughout the language learning process (Cummins & Early, 2011). By valuing student's skills, *identities of competence* are promoted (Manyak, 2004); learners are not incompetent speakers of the target language but rather *emergent multilinguals* with capabilities across multiple modalities (López-Gopar, 2007). Through learning the target language, their other identities and experiences are not devalued,

[11] See section 3.1.4 for a detailed discussion of the differences and similarities between different types of language learning.

[12] As an example, COVID-19 resulted in a very quick drop in demand in the sphere of cultural tourism, while also creating a rapid increase in demand in medical translations to prevent the spread of disease.

but rather value is added through the acquisition of additional cultural and social capital. Such an additive approach can enhance investment in the learning process.

1.3.4 Implications for language revitalization

By using learner investment as a way to understand how to best promote language learning and language use in a language revitalization context, language activists and other language revitalization practitioners are provided with a framework to understand how identity, ideologies, and capital interact to encourage or discourage a learner to invest in language learning and use. The idea of investment respects learners' multiple and emergent identities, recognizing that they are not fixed but in the process of being (re)formed through interaction. Investment contrasts with theories of language learning that focus on fixed aspects of a learners' personality and that minimize the role of other individuals in the social surroundings. By centering the interactions between learners and others, it becomes clearer that learners are not simply motivated or unmotivated to learn, but rather that they seek to develop membership in communities where their identities are seen and respected. In this dissertation, I leverage evidence from Zapotec language revitalization to support the claim that a focus on investment can help us understand why even motivated language learners, when faced with an environment that is not receptive to their language learning, may pull back from language learning and use, and that the way forward is to consider not only the language learner, but the environment in which learning takes place.

Furthermore, these claims resonate with the results of PAR (at least in the case study of Teotitlán), as one of the central concerns of stakeholders was the creation of a supportive community of language learners and their families. Students and their parents indicated activities that were useful in language learning, and the activities that generated great enthusiasm centered around community building. The consensus reached through PAR was that it was paramount to focus on community building as a central tenet of language revitalization in Teotitlán, as interaction with a supportive learning community allowed learners' identities as successful learners to be affirmed, which in turn enhanced their investment in Zapotec language learning and language use.

Finally, I appreciate how the concept of learner investment and the interactions between identity, ideologies, and capital honor the complexity and difficulty of language learning, yet still provide space for a positive outlook. Learners have agency in choosing whether and how to engage with the learning process, but it is also recognized that other societal forces may impact their abilities to achieve their goals. I believe that this perspective is helpful in pushing back against a deficit or abyssal model of language learning and use (Flores & Rosa, 2015; García et al., 2021; Tuck, 2009) which places the onus of learning on the learner and their own motivation and skills. Instead, investment also acknowledges the role played by systemic forces: racism, sexism, and colonialism continue to impact learners' outcomes and shape their interactions with others. While these larger forces are not within the learner's control, the learner maintains agency in how they interact with these forces and can actively

leverage their cultural, economic, and social capital to move towards the best outcome for them as individuals.

This intersects with a growing call in the literature to think critically about the way issues of language endangerment and revitalization are framed and to move away from deficit-based framings of language loss and towards abundance-based framings of language learning, revitalization, and emergent vitalities (Fitzgerald, 2017; Perley, 2012, 2013; Tuck, 2009). By casting learners not based on any deficits but rather based upon their growing skills, their investment in the learning process can be encouraged. Their self-identification as upcoming participants in new language practices, incoming members of their target speech community, and as successful learners is affirmed, and this alignment of self-perception and others' perception facilitates continued investment in the learning process.

1.4 Overview of Zapotec language revitalization program

The case study presented here focuses on Zapotec language workshops hosted between 2017 and 2019 in Teotitlán del Valle. I was the main facilitator of the first two workshops, held in summer 2017 and 2018; in January 2019 Licenciada Rosita Jiménez, a Zapotec speaker from Teotitlán, joined as a co-instructor and also led the workshops in summer 2019 and December 2019. While the exact format of each set of workshops was unique, sessions were generally two hours each (though some sessions that involved field trips were longer) and were held either daily or every other day over the course of two to three weeks.

The course was designed for and advertised to learners between the ages of 5 and 12, though children as young as 4 and as old as 16 attended, and Rosita and I did our best to accommodate students of different abilities using a mixed-levels approach in designing the curriculum and learning activities (Velasco Zárate & Ramírez García, 2017). A total of 77 students have attended the Zapotec workshops, including 24 who have attended more than once (on average, each student has attended 1.62 workshops). Of the 44 students who reported the languages spoken by their parents, 35 reported reported having one or more Zapotec-speaking parents. Furthermore, all participants were residing in Teotitlán at the time of the workshop, and thus they had the possibility of accessing Zapotec language through interacting with speakers around town.

For this reason, one of the main goals of the workshops was to create spaces where students would interact with Zapotec speakers in naturalistic ways (i.e. in contexts that would be likely to emerge outside of the language workshops). To this end, Rosita and I aimed to spend approximately half of the workshops interacting with Zapotec speakers in the community, and the other half of the workshops preparing students for those interactions so that they could feel confident in their ability to use Zapotec with community members. Rosita and I also focused on building a sense of community among learners and their families, providing opportunities like field trips to sites of cultural and historical significance and

having family picnics where participants could get to know one another and also speak together in Zapotec.

In terms of explicit Zapotec language instruction, Rosita and I aimed to be as non-prescriptive as possible, encouraging learners to write the language in ways that would help them to pronounce it and encouraging students to appreciate differences in different speakers' use of the language. We collected synonyms and alternate pronunciations of words from Zapotec speakers and from online resources and encouraged students to appreciate the diversity of Zapotec speech within Teotitlán. As a Zapotec learner myself, I strove to model the learning process for students, asking Rosita and other Zapotec speakers for help with pronunciation, vocabulary, and grammar, and modeling the process of making and correcting a speech 'error' or other communicative difficulty with a Zapotec speaker. We then tried our best to create environments where students could learn collaboratively and practice sustainable language learning skills (such as using the online dictionary or asking a Zapotec speaker) that they can rely on throughout the year and not only during the short and periodic language workshops. It was our hope that the workshops would provide a starting point for language learning that could continue throughout the year and throughout the community.

Most importantly, both in the field trips and in the classroom portions of the workshops, Rosita and I hoped to create a space where learners felt comfortable expressing themselves and learning through making mistakes without fear of judgment. Through building a sense of shared trust and community, we hoped to foster learner investment, and thus encourage learners to learn and use Zapotec confidently.

1.5 Researcher background

In section 4.1, I will elaborate more on the history of my involvement in the Zapotec language workshops for kids in Teotitlán, but here I would like to present a brief introduction of myself and my positioning within this project. I am a settler colonial, US American who was born and raised near Chicago, Illinois (and briefly Plymouth, Minnesota). Although my paternal great grandfather was a speaker of Irish, my great grandmother was not, and beginning with my grandfather's generation, members of my family have all been raised as monolingual English speakers. On my maternal side, we are similarly monolingual English speakers.

Though raised as a monolingual English speaker, I began learning Spanish in middle school, and I continued studying Spanish throughout high school and into college at the University of Chicago. In 2011, I spent the winter quarter on a study abroad program in Oaxaca City, where my Spanish skills greatly improved and I first became aware of Mexico's linguistic diversity. I returned to Oaxaca from January to March 2012 to collect linguistic data on Spanish-Zapotec code-switching for my undergraduate thesis. From September 2012 until April 2015, I lived in Oaxaca City working as an English teacher. During that time I also completed two semesters of formal Zapotec language instruction through the Biblioteca

de Investigación Juan de Córdova, taught by Janet Chávez Santiago, and I frequently visited Teotitlán, forming and deepening friendships there.

In 2015, I began a PhD program in linguistics at the University of California, Berkeley, and from 2015-2019, I returned to Teotitlán approximately twice per year for periods of time between two and twelve weeks at a stretch in order to carry out language documentation and (beginning in 2016) revitalization. These trips totaled approximately 40 weeks and were spread out over January 2016, May-August 2016, January 2017, May-August 2017, July-August 2018, January 2018, July-August 2019, and December 2019. After I became involved directly in language revitalization projects in 2016, my focus gradually shifted from documentation and linguistic analysis (Deal & Nee, 2017; Nee, 2018) to language revitalization itself. Nevertheless, I continued to carry out language documentation, particularly with a focus on documenting language that would be useful for language revitalization.

As a result of my position as a US citizen, English speaker, and PhD student, I have significant cultural, social, linguistic, and economic capital that may influence my work in Teotitlán. At the same time, I lack cultural capital as a Zapotec learner and a non-Indigenous researcher. In some situations, I have little perceived authority to weigh in on issues that affect the community of Zapotec speakers and learners; in others, my opinion is actively sought out.

Given this background, I find it critical to examine the multiple roles that I sought to fill throughout this language revitalization project: researcher, teacher, language activist, student, colleague, linguist, and friend, among others. While it is possible to name these various roles, I do not find it particularly useful think of these roles as belonging to distinct categories; rather, my various roles simultaneously influence one another. In particular, I often find my role as 'researcher' to be overwhelmed by my role as 'teacher'. While I seek to gather data to enable the research aspect of this project to be successful, whenever the research project gets in the way of students' experiences, I choose student outcomes over research. Ultimately, I see this choice as being in line with the nature of this project as participatory action research: while I hope to use this project to gain deeper insights into how to most effectively promote Zapotec language use among children in Teotitlán, I am also working with children whose Zapotec language use I am hoping to promote. Thus, I prioritize the well-being of the children who I work with so that they will, hopefully, leave the program with a positive attitude towards the Zapotec language and a disposition to use the language in their daily lives, even if this results in the loss of some potentially relevant data for the research side of the project.

1.6 Dissertation outline

With the background on my theoretical approach, the general shape of the Zapotec language workshops for kids, and my own positionality laid out, I would like to close this introductory chapter with an overview of how the remainder of the dissertation is structured. In chapter 2, I present some background on Zapotec language use among the children from Teotitlán

who participated in this study based on language use reports provided by children and their parents. The interview data point to a decrease in Zapotec use between the parent and the child generations, indicating language shift towards the dominant language of Spanish. At the same time, this shift is not evenly distributed, nor is it complete; some children continue to use Zapotec daily, and all children tend to use Zapotec more in some circumstances than others. These findings contextualize the motivation behind pursuing language revitalization in Teotitlán. Furthermore, the data provide a starting point for some of the discussions carried out through PAR regarding what the goals of language revitalization should be and which initiatives should be implemented to achieve those goals.

Given the complexity of implementing language revitalization, particularly through a PAR methodology in which a multiplicity of viewpoints is considered with the ultimate goal of reaching some kind of consensus that is beneficial for the group as a whole, it can be useful to understand the scope of factors that influence language revitalization implementation and outcomes. In chapter 3, I propose a series of factors that I argue should be considered in designing, implementing, and evaluating language revitalization initiatives. These factors are broader than linguistic factors or language acquisition outcomes, but rather include larger institutional, societal, and ideological factors that have suppressed and continue to suppress minoritized individuals and communities, and which form the root cause of language loss and are thus crucial to address through language revitalization. The considerations laid out in chapter 3 should be helpful to those seeking to begin a language revitalization initiative in thinking about the parameters involved in answering key questions that will shape the design of an initiative: What factors should be discussed through PAR to understand the reasons behind language loss, the goals of language revitalization, and the practical affordances and limitations of the specific circumstances (section 3.2)? Who are the stakeholders that can or should be involved in the language revitalization process and what roles will they fill (section 3.3)? How can language revitalization outcomes be assessed and understood (section 3.4)? What are some commonly used pedagogical approaches that may be useful in teaching a language through language revitalization (section 3.5)?

In chapter 4, I present the case study that is the focus of this dissertation: language revitalization workshops for kids learning Zapotec in Teotitlán del Valle. I provide an overview of the project's history (section 4.1) as well as an outline of other language revitalization initiatives in Teotitlán (section 4.2). In section 4.3, I consider the factors outlined in chapter 3 and how they influenced the shape of the project. The remainder of the chapter (sections 4.4-4.6) describes the implementation of the project with a focus on how specific activities led to learner investment and positive outcomes. A sample lesson plan and sample activities are provided, and their implementation and results are discussed (section 4.6). It is my goal that, paired with the discussion in chapter 3 of how different factors can lead to different outcomes, the sample lessons and activities illustrated in chapter 4 can be adapted to better suit other language revitalization contexts.

Chapter 5 provides observational data and analysis of language use among study participants. Data come from my own observations as a participant observer in the language classes, as well as observations made from the recordings of classroom sessions (section 5.1). Some

students also participated in long-format speech environment recordings (LFSE; section 5.2) in which they were asked to wear a small recorder throughout the day; the recorder was meant to capture their naturalistic speech along with the speech of their interlocutors. This data was used to better understand (both quantitative and qualitatively) learners' exposure to and use of Zapotec in more natural environments.

Chapter 6 combines insights from the previous chapters, along with other data sources including interviews with children and parents (section 6.2.2), as well as *photovoice* projects for expressing what speaking Zapotec means (section 6.2.1). These sources were used to evaluate the extent to which there were changes in terms of contexts of Zapotec use, linguistic abilities, and awareness around language endangerment, and to understand to what extent the program succeeded in achieving its goals.

Finally, chapter 7 provides a summary of key themes that have emerged from this study, as well as an analysis of what this case study suggests for future language revitalization initiatives, in Teotitlán and elsewhere (section 7.1), and what research questions remain to be investigated (section 7.2). It is my hope that the discussion here will illustrate the ways in which language revitalization in Teotitlán is about much more than language; most importantly, it is about individuals seeking to feel affirmed in their identities and supported by their communities.

Chapter 2

Reported Zapotec language use in Teotitlán

In this chapter, I present some background information on language use in Teotitlán. In section 2.1, I present an overview of the population in Teotitlán based on census data along with my personal experiences and observations from my time living in Teotitlán. In section 2.2, I then present reported language use among children learning Zapotec as part of the language revitalization workshops, based on one-on-one interviews with children and their parents that I conducted in 2019.

The goal of this chapter is to begin to provide a picture of how Zapotec and other languages are used in Teotitlán. Of course, given that the reports on language use come from a very small sample (32 participants), these data cannot be used to generalize across individuals in Teotitlán more broadly. While reported language use may not be entirely reliable, certain reported language use metrics may provide helpful insights into overall language use (Bedor et al., 2012). Thus, while they are imperfect, these data and my analysis can provide some insights into language use among participants, particularly when paired with other data, including census data (section 2.1) and observed language use (chapter 5). It is my hope that this chapter will provide the background information about language use in Teotitlán necessary for the reader to more fully understand the reasoning behind the choices that were made to implement the Zapotec workshops for kids (chapter 4) and to understand how the workshops may have led to the impacts and outcomes described in chapters 6 and 7.

2.1 Population and languages of Teotitlán del Valle

TdVZ is a variety of Western Tlacolula Valley Zapotec within the Otomanguean language family. There are a number of Zapotec language varieties spoken throughout the Tlacolula Valley and the Sierra Norte (which borders Teotitlán to the north), not all of which are

mutually intelligible.[1] On a slightly broader scale, Oaxaca state is one of the most linguistically diverse areas in the Americas, with 16 Indigenous language groupings (Yahalom, 2016) alongside Mexican Spanish. Furthermore, some Oaxacans are also learning additional colonial and global languages including French, German, and Italian, among others. At least some of these language learners are motivated by increasing opportunities to interact with speakers of these languages as Oaxaca continues to grow as a destination for international tourism.

The 2020 Census reports that 63.51% of the population over the age of three in Teotitlán speaks an Indigenous language, out of a total population of 6,392 people (INEGI, 2020). Unfortunately, the *Instituto Nacional de Estadística y Geografía* (INEGI), the organization that collects census data, does not specify which Indigenous language each individual speaks. However, it is likely that the vast majority of Teotitecos who speak an Indigenous language speak Zapotec. Another possible source of error is that the Census data relies on individuals to self-report the languages they speak, and as a result, respondents may self-report as speakers or non-speakers based on different criteria, possibly making the Census results less reliable. The state government of Oaxaca (*Plan Municipal de Desarrollo: Teotitlán del Valle*, 2010) reported 4,033 Zapotec speakers (198 monolingual and 3,835 Spanish/Zapotec bilinguals, out of a population of 5,601 as of 2005, which is similar to the 4,060 people reported to be Indigenous languages speakers by INEGI in 2020 (INEGI, 2020). Comparing these two reports, while there is possibly a slight increase in the total number of Zapotec speakers, the percentage of speakers throughout the population as a whole has consistently decreased—from 70.49% in 2000, to 68.45% in 2005, to 63.51% in 2020.[2] According to the Oaxacan state government (*Plan Municipal de Desarrollo: Teotitlán del Valle*, 2010) and my own experiences in Teotitlán, Spanish and Zapotec are the most widely used languages in Teotitlán, though I have also met some residents who speak additional languages, including other Indigenous languages, English, and French. According to UNESCO, Western Tlacolula Valley Zapotec (and thus TdVZ as a subset of Western Tlacolula Valley Zapotec) is "definitely endangered" (Moseley, 2010), and the decrease in proportion of the population that speaks Zapotec lends further evidence to language shift.

While previous research and my own participant observations in Teotitlán suggest that children are increasingly using Spanish instead of Zapotec, resulting in a shift towards Spanish dominance (see section 5.3 for additional details), Teotitlán continues to be a vibrant center for Zapotec language use and promotion. Zapotec can be heard throughout town,

[1]The Zapotectecan languages of the Sierra Norte and those of the Tlacolula Valley fall within different subgroups in the Zapotecan language family, as members of the Northern and Central Zapotec subgroupings respectively (Campbell, 2017). Within each subgrouping, there are a number of varieties which exhibit different degrees of mutual intelligibility.

[2]The data provided by the Oaxacan state government (*Plan Municipal de Desarrollo: Teotitlán del Valle*, 2010) come from INEGI and the *Sistema Nacional de Información Municipal-INAFED*, and it is not clear if the surveyed population was completely consistent between 2000 and 2020. Specifically, the INEGI 2020 data clarifies that 63.51% of the population *over three* speaks an Indigenous language; the state government's report from 2010 does not make any such age specifications in their reporting.

spoken by adults (and some children) in the marketplace, at community meetings, and at family celebrations. Furthermore, a number of language revitalization activities have been implemented within the community (see section 4.2 for details). There have been Zapotec language initiatives offered at the preschool, one of the two elementary schools, the middle school, and the high school. There is a cultural center and museum that contain displays written in Zapotec. A community language committee, *Diidxih baa xteh gulaas*, promotes Zapotec. Finally, I was involved in hosting Zapotec language workshops for kids periodically during summer and winter from 2017-2019.[3] Thus, while Zapotec use continues to be threatened by colonial languages (like Spanish and English), there is also a strong push for Zapotec language revitalization.

2.2 Reported language use from one-on-one interviews

Now that more general data on language at the level of the town has been presented, I would like to consider more specifically the languages used by learners and families involved in the Zapotec language workshops. In this section, I present the findings of one-on-one interviews with some learners and their families. I will focus on two sets of interviews carried out in January and July-August 2019. The interviews from January follow a pre-test/post-test design (that is, one set of interviews was carried out prior to the workshop and one set of interviews was carried out following the workshops) in an attempt to gauge whether the Zapotec language workshops had any immediate impact upon language ideologies and language use. I will refer to these intervews as A1 (January pre-test) and A2 (January post-test) interviews. The interviews from July-August, which I will refer to as B interviews, included more open-ended questions and were collected following a one-shot methodology (that is, only one set of interviews were carried out). Through the B interviews, I hope to build a more nuanced picture of some of the language ideologies held by participants to complement the more quantitative data that had been collected in the A1 and A2 interviews. The A and B interviews build on pilot interviews conducted in summer 2018. In the following subsections, I present in detail the methodology I employed as well as the results of these interviews.

2.2.1 Methodology

Participant recruitment. During the pilot phase, I recruited participants through radio advertisements and word of mouth. I asked the host of the local Zapotec radio station, *Tsae Xigiae* (The Voice of Teotitlán), to announce the upcoming Zapotec language workshop for kids during the morning news, and at the same time to invite any interested community

[3] I plan to continue hosting these workshops in the future, but at the time of writing they have been put on hold due to the COVID-19 pandemic.

members (adults and children) to participate in short interviews regarding the languages they speak and how they feel about those languages. I provided my name, qualifications, phone number (international and local), email address, and physical address, as well as times during the week that I would be sitting in the offices of the municipal government so that people could approach me in person, either to participate in the study, or to ask me further questions. The radio announcement, however, did not result in many participants seeking me out, and I further recruited participants through snowball sampling, asking my acquaintances, including students who had participated in previous language workshops, if they or anyone they knew wished to participate.[4] I had more success with recruitment following the workshop, at which time I could follow up with all of the students who had attended the Zapotec language workshop, asking each of them and their families if they would like to participate. After the completion of the workshop, I had a larger pool of students from which to recruit, and families were generally more willing to participate after they had gotten to know me and more deeply understood the purpose of the language workshops and associated language research that I was carrying out. While I was open to interviewing any interested community members, I did focus on recruiting learners and parents; as a result, the interview data may overlook the language use of other family members who may be influential in the lives of Zapotec learners. However, I did ask both children and parents who they speak to during each hour of the day, and in this way I was able to find out more information about who (besides their parents) children might be interacting with.[5]

In January 2019, I did not announce the study via the radio, but instead recruited directly from the pool of students who had previously attended the language workshop or participated in the study, and their parents, for the A1 interviews. Of course, I was willing to interview anyone who was interested in participating, whether or not they had attended the language workshop, but no one approached me outside of attendees of the workshop and their families. Following the workshop, I also invited all of the Zapotec learners from the workshop and their families to participate in the A2 interview. For this reason, the data that I was able to collect were not a balanced pre-test/post-test sample; instead, there are a greater number of A2 responses collected (9 children, 10 adults) than A1 (5 children). As in the pilot phase, more people were interested in participating after having gotten to know me and come to trust me through participation in the Zapotec language workshop, resulting in more participants in the A2 interviews than in the A1 interviews. In the data analysis below, I present both the A1/A2 comparison from the 5 interviews that followed the pre-test/post-test design, as well as results from A2 interviews alone, though I will always specify which data I am reporting on.

In July-August 2019, I again recruited participants from the pool of enrolled students and

[4]I am not sure if the radio announcement resulted in any participants. Although one parent enrolled their child in the Zapotec workshop while I was sitting at the municipality as I had announced, it was not clear to me whether that individual came because of the radio announcement, or because they happened to be at the municipality for other business, were curious about what I was doing, and so approached me.

[5]In future work, I hope to expand participant recruitment and speak with other community members who play roles in the lives of children learning Zapotec.

their families. After considering the data from the pilot and the A1/A2 interviews, as well as feedback from participants that the questions seemed redundant, I decided to conduct the B interviews as one-shot interviews that focused less on quantitative-type answers and more on open-ended discussion that would allow participants to explore more deeply their language use, language attitudes, and the relationship between these two. This decision was in accordance with the desires of many participants, and in keeping with the PAR framework of the current study, which requires responsiveness to community desires, including making changes to the research methodologies based on input from all stakeholders.

Participants. Interview A1 included five children, ages 6, 8, 9, 11, and 15. Interview A2 included those five children, as well as four more children, ages 7, 8, 9, and 11 (mean age 9.3), and 10 adults, ages 31-49 (mean age 39.6). Interview B included 14 children and 13 adults.[6] Seven of the children and seven of the adults who participated in interview A2 also participated in interview B. Several participants were members of the same family. In interview A1, three children were siblings. In interview A2, there was one group of three siblings and one group of two siblings, as well as four pairs of parents. In interview B, there was one group of three siblings and three pairs of siblings, as well as four pairs of parents. Overall, the A1 and A2 interviews included data from members of five households, and the B interviews included data from nine households (eight homesteads).[7]

In the A2 interview, four children reported Zapotec fluency, two reported semi-fluency, and three reported beginning Zapotec fluency, while five reported Spanish fluency and four beginning Spanish fluency.[8] Three also reported beginning English fluency. These results suggest that this type of direct language fluency question does not result in accurate reports, as one can observe that all of the participants use Spanish with high fluency, through only about half reported fluency.[9] This calls into question the accuracy of their Zapotec fluency self-reports (as has been discussed in the literature, and is further examined in section 3.4.2). For this reason, other measures of reported fluency will be examined throughout the remainder of this section.

In interview B, I also collected information on the languages spoken by respondents' parents. All but one child reported their parents speaking both Zapotec and Spanish; one child reported that their parent spoke Spanish and a little bit of Zapotec.[10] The picture was a

[6]I did not collect age data during interview B.

[7]I consider individuals who live within the same house as a single household and those who live in separate houses that share a common space such as a patio as members of the same homestead.

[8]Participants were asked if they could say "all the things they wished to say in the language" (which I count as 'fluent'), "more than half of the things they wished to say in the language" (which I count as 'semi-fluent'), "less than half of the things they wished to say in the language" (which I count as 'beginning fluency'), or "none of the things they wished to say in the language" (which I count as 'no fluency'). For the full interview questionnaire (in Spanish and in English), see appendix A.

[9]All children who participated spoke Spanish in a way that to me suggested they were 'first-language' Spanish speakers, though in using the term 'first-language' I leave open the possibility that they had simultaneously acquired both Spanish and Zapotec as 'first languages'.

[10]I asked children about their parents, *tus papás*, vaguely rather than specifying 'mother' and 'father' after seeing participants' discomfort during the pilot study reporting back to me that they don't know or

	S	Z	Balanced bilingual	Z-dominant bilingual
Children's parents	1	0	13	0
Children's grandfathers	0	2	5	5
Children's grandmothers	2	3	4	4

Table 2.1: Reported language proficiencies based on data collected in interview B (summer 2019). S indicates monolingual Spanish speakers and Z monolingual Zapotec speakers, in contrast with balanced bilinguals (speaking both Spanish and Zapotec equally proficiently) or Zapotec-dominant bilinguals; no Spanish-dominant bilinguals were reported. Presented are the number of individuals reported for each category of proficiency. Children reported their parents' language proficiency (line 1). Each child reported on their parents (*papás*) as a unit. Parents also reported on their own parents' language proficiencies (i.e. their children's grandparents' language proficiencies) (lines 2-3).

bit more complicated among parents. Two adult participants reported having monolingual Spanish-speaking mothers, two reported monolingual Zapotec-speaking fathers, and three reported monolingual Zapotec-speaking mothers. Ten adults reported having fathers who spoke both Spanish and Zapotec, through five of those were reportedly Zapotec dominant. Among mothers, eight were reported to be bilingual, with four Zapotec dominant bilinguals. These data are summarized in table 2.1.

Interview questionnaires. A1 and A2 interviews were conducted using the guides found in Appendix A; B interviews relied on the guide in Appendix B. The A1 and A2 interview questions were similar, but not identical, for children and for adults. The main difference was that children were asked to reflect at times on their own language use while adults were asked to reflect on their children's language use. There were closed-choice questions in which respondents were asked whether they thought children spoke more Zapotec or Spanish in given situations (such as eating breakfast, visiting a neighbor, or going to Oaxaca), as well as questions about language use along a Likert scale regarding how often Zapotec is used or how easy/difficult it is to speak Zapotec in a given situation. Respondents reported the five people with whom they or their children converse most frequently, and in which language(s). Respondents also reported their activities hour-by-hour during a typical day, as well as what language they are using more during that hour. Finally, there was a series of open-ended questions regarding changes that respondents have noted as a result of the language workshops, their motivations for attending the workshop, and their goals, reactions, and suggestions for the future, the results of which will be reported in section 6.2.2.

In interview B, the questions were mostly open-ended. The question in which respondents reported their activities hour-by-hour during a typical day was repeated; furthermore, data

are not in contact with one of their parents.

was collected not only on what language is used more during that hour, but who is speaking to the child, what language that person uses, and what language the child responds in. Open-ended questions probed the languages spoken by participants, their parents, when and where different languages were used, how respondents felt about their languages and language use, and how respondents felt about the language workshops. The data on language use will be presented in this chapter, with data on language attitudes presented in Chapter 6.

The interviews did not include any questions that directly probed participants' language proficiencies through measures such as vocabulary size or grammatical proficiency for a variety of reasons. Most importantly, asking Zapotec learners to take a test on their Zapotec abilities could negatively affect their investment in learning Zapotec, as low performance may not align with their self-perception as being members of the Zapotec community. I did not wish to risk this outcome. Furthermore, the grammar of TdVZ remains understudied, and the process of developing some standard against which to judge learners' grammaticality would be time-consuming and could cause disagreements between individuals who speak TdVZ differently. Instead of testing learners' proficiency directly, I present their self-reported language use in this section, as well as their demonstrated proficiency through observation of their daily language use in section 5.2.

Interview procedures. I conducted all interviews, and when permission was given, interviews were recorded using the external microphone on the H4n Zoom recorder. I led the interviews in Spanish, though Zapotec was used from time to time when the respondent preferred to answer a question in Zapotec. However, given my fluency in Spanish and my lack of fluency in Zapotec, the vast majority of interviewing occurred in Spanish. I took notes on the questionnaire during the interview. Interviews took place in a location of the participants' choosing; most chose to meet at their homes. The interviews generally lasted between 15 minutes and an hour. Recordings of adult interviews (when consent was given) will be archived at the California Language Archive (Lazo Pérez, Martínez Soza, Nee, & Anonymous, 2016). I encouraged participants to be alone while completing the interview so as to prevent others from influencing their answers (and to prevent the participants' responses from influencing others if they were also planning to complete an interview), but this was not always possible. Particularly for some of the younger children, they and/or their parents preferred for a guardian to be present during the interview, and I of course respected those preferences. Unfortunately, this resulted in some children's responses likely being influenced by their parents, including moments when answers were suggested to children by caregivers. I explained that questions were to be answered by the children alone at the start of the interview, and reminded parents throughout to let their children answer independently, but these instructions were not always followed. I report only answers that were at least agreed to by children. Due to the small sample size, I chose not to discard interviews with parent involvement, though I fully acknowledge the potential this has to introduce bias.

It is also important to consider the effect that I may have caused by carrying out the interviews myself. All participants were aware that I am a doctoral student at UC Berkeley and that I am the co-facilitator of the Zapotec language workshops. Most participants were individuals that I have an ongoing relationship with, whether as their friend, teacher,

Zapotec student, or neighbor. This may have reduced participants' willingness to state negative opinions about the Zapotec language or about the Zapotec language workshops. It may have influenced them to change their reports of language use, as well. On the one hand, it is possible that participants may have wanted to emphasize their progress in learning Zapotec, reporting greater Zapotec use than is truly the case, given that I am a Zapotec teacher and presumably hope children use more Zapotec as a result of the workshops. On the other hand, it is possible they may have wanted to emphasize the rapid loss of Zapotec in the community so as to motivate continued Zapotec language workshops, thus reporting lower Zapotec use than is truly the case. It is also possible that they wished for the workshops to end, and may have reported higher Zapotec use to suggest that I had achieved by goal and could leave, or lower Zapotec use to suggest that I was making no impact and should move to another project. Although these difference scenarios result in different effects of my involvement, it seems clear that in any situation my presence could have affected reported language use in a significant way.

Given the problems that may have been caused by my conducting these interviews, why did I carry them out myself? First, while having someone who was not involved in implementing the Zapotec language workshops may have mitigated participants' desire to answer positively to questions about the benefits of the course, I do not believe it would have removed that bias. As part of the informed consent process, participants were told why the interview was taking place, and what the data would be used for, namely to improve the Zapotec language workshops. With this information, it would be clear to participants that I would eventually gain access to whatever they would report in the interview. Second, I wished to carry out this work as part of the PAR framework, in which all stakeholders participate equitably and open communication is maintained. Thus, rather than try to downplay my involvement in analyzing the data collected through interviews, I preferred to be open and upfront about my involvement in this research. Furthermore, as I noted earlier, I have formed relationships will all of the participants in this study that have allowed for the development of trust over time. I believe it would be difficult for this same level of trust to be obtained by an outsider who was brought in for the sole purpose of carrying out these interviews. Alternatively, the interviews could have been conducted by someone else in the community who had already built trust with the participants. While I think that this would have been a viable option, it did not appear that anyone wished to take on this task. Furthermore, I think a similar confound could have occurred with interviews conducted by a community member, resulting in the relationship between interviewer and interviewee affecting the participants' responses.[11] Given these circumstances, I carried out the interviews. My goal in the interviews was to build on our shared sense of trust and to create a space in which all participants (both interviewees and interviewer) felt free to express their opinions without judgment. While I am not sure that I achieved this to the

[11]While Teotitlán is a relatively large small town, it is nevertheless a small town, and people are generally aware that what they say to one person, particularly in an interview context, may be shared with others or influence language policy decisions in the community.

greatest possible extent, I believe that I made progress in the direction of openness and collaboration that is in keeping with best practices for PAR, and I was able to follow up on issues that were raised during the interviews through other methods, such as photovoice (section 6.2.1) and observed language use (sections 5.1 and 5.2).

In the following subsections, I present my analysis of hourly language use (section 2.2.2) and language use by domain (section 2.2.3) based on the results of the interviews. I then connect these reports of language use to the Zapotec language workshops (section 2.2.4) before concluding (section 2.3).

2.2.2 Hourly language use

Discussion of results. Following the findings of a study by Bedor et al. (2012) seeking to determine which measures most robustly correlated with language proficiency in bilinguals, I collected reports of children's language use hour by hour, as this measure (as reported by parents) was found to correlate most strongly with language proficiency among Spanish-English bilingual pre-kindergartners and kindergartners in the Bedor et al. (2012) study. I asked both children and their parents to report on the children's language use by hour, based on a typical day. Participants were asked to think about each hour of the day and report what activity they were doing and what language they were using. If a participant reported using both languages during an hour, I counted it as a half hour of each language, unless they stated that one language was used more than the other, in which case I counted only the language used more. First, I will report on the children's self-reports of their own language use before turning to their parents' reports.

Of the nine children who participated in the A2 interviews, 33% reported mostly using Zapotec, 22% reported some Zapotec use, and 44% reported no Zapotec use throughout the day (table 2.2). I was also able to compare reports from before and after the workshop collected from the five A1 interview participants (table 2.3). Four of the five participants had very similar reports before and after the workshop. Three students appeared to be Zapotec dominant, reporting using Zapotec 62% vs. 57% of the time, 64% vs. 63% of the time, and 55% vs. 50% of the time. One student reported using Zapotec 0% of the time both before and after the workshop. The fifth student did have a marked increase in Zapotec use, from 27% to 42% of the time. Furthermore, a shift from Spanish use to Zapotec use was noted during the completion of chores such as preparing food and making *canillos* (bobbins) for weaving, and these activities were discussed during the Zapotec language workshop.

I also asked parents to report on their child's language use hour by hour in January (tables 2.2, 2.4)[12] and summer (tables 2.2, 2.5).[13] Reports of Zapotec dominance were similar between adults and children in January, with three of ten adults reporting their children as

[12]I was only able to interview parents after the workshop. Furthermore, I did not ask parents to specify which child they were reporting on. In some cases, the parents appear to be reporting on the child who also participated in the interview, but in other cases the parents appear to be reporting on another child, or providing a general report of how all of their children are behaving on a given day.

[13]I have omitted data from one participant in order to preserve the anonymity of family groups.

January 2019	**Children's self-reports**		**Parents' reports of children**	
Zapotec dominant		33%		30%
Some Zapotec use		22%		50%
Spanish only		44%		20%
Summer 2019	**Children's self-reports**		**Parents' reports of children**	
	Listening	Speaking	Listening	Speaking
Zapotec dominant	38%	23%	54%	23%
Some Zapotec use	46%	46%	46%	38%
Spanish only	15%	31%	0%	38%

Table 2.2: Self- and parent-reported language dominance based on language use by hour from A2 (January 2019; 11 children, 10 adults responding) and B interviews (Summer 2019; 13 children, 13 adults responding). Participants reported what language they used most during each hour of the day (in January 2019) or what language they listened to most and spoke most during each hour (in Summer 2019). I totaled the number of hours each participant reported using, listening to, or speaking Zapotec and Spanish. If the proportion of hours was greater than 50%, that individual was categorized as 'Zapotec dominant'. If there was some Zapotec use, that individual was categorized as 'Some Zapotec use'. The category of 'Spanish only' was reserved for those who reported no Zapotec. The percentages in this chart indicate the percentage of respondents falling into each category.

using Zapotec more than half the time, five reporting some Zapotec use, and two reporting only Spanish use. The main difference to note here is that a greater proportion of adults reported their child using at least some Zapotec in comparison to reports from children themselves. This may be indicative of a disconnect between adults' perception of Zapotec use among children and children's actual use of Zapotec, or it may indicate underreporting from children. I will explore this issue in further detail with observed naturalistic language use data in section 5.2. Looking more specifically at reported Zapotec within family groups (table 2.4), the two children who reported Zapotec dominance also had parents who reported Zapotec dominance for their children. Among three children who reported no Zapotec use, only one parent likewise reported no Zapotec use, although the other two parents reported some (low) Zapotec use. Child 4 reported some Zapotec use, while their parent reported Zapotec dominance, though the difference in their two reports was only 10%. While the reports of parents and children do not perfectly align here, it does appear that they are related, with children reporting slightly less Zapotec use than their parents perceive of them.

Another possible issue with the methodology used in the January A1 and A2 interviews is that I asked participants which language was used more during each hour; it is possible that some interpreted this to mean "What language do you speak more?" and others "What language do you hear more?" For this reason, in the B interviews, I collected information not

	January 2019						Summer 2019					
	Before			After			Listening			Speaking		
	S	Z	%Z	S	Z	%Z	S	Z	%Z	S	Z	%Z
Child 1	5	8	62%	6	8	57%	5.5	7.5	58%	6	7	54%
Child 2	5	9	64%	5.5	9.5	63%	2	11	85%	2	11	85%
Child 3	11	0	0%	12	0	0%						
Child 4	11	4	27%	8	6	43%	0	16	100%	14	2	13%
Child 5				14	0	0%	9	0	0%	9	0	0%
Child 6				15	0	0%						
Child 7				13	3	19%	9	5	36%	7	9	56%
Child 8				13	0	0%	4	11	73%	10	5	33%
Child 16	5	6	55%	6	6	50%						

Table 2.3: Self-reported language use by hour, before (A1 interviews) and after (A2 interviews) Zapotec language workshops in January 2019, and in Summer 2019 (B interviews). The table shows the number of hours spent using Spanish (S) versus Zapotec (Z) before and after the January 2019 workshop, as well as the number of hours spent listening to Spanish versus Zapotec and time spent speaking Spanish versus Zapotec in summer 2019. The percent of reported time spent using, listening to, and speaking Zapotec is also reported.

only on the activity performed during each hour, but also the person the child was speaking to, what language they addressed the child in, and what language the child responded in (table 2.5). Of the 13 children whose responses I analyzed, 23% reported speaking mostly Zapotec, 46% reported speaking some Zapotec, and 31% reported speaking only Spanish throughout their day.[14] Overall, participants reported higher exposure to Zapotec, with 38% reporting hearing mostly Zapotec, 46% hearing some Zapotec, and only 15% hearing no Zapotec. Parents likewise reported much higher exposure to Zapotec than speaking of Zapotec among their children. Such findings are consistent with observations made in cases of language shift around the world, in which children do not acquire a language despite exposure to that language. Furthermore, as will be shown in section 5.2, these reports are supported by evidence from naturalistic, day-long recordings of language use. Overall, children's responses from the B interviews suggest a higher level of Zapotec use—both in listening and speaking—than interviews A1 and A2. This could be indicative of a shift towards greater Zapotec use, though it could also represent a shift in ideology that would cause greater reported Zapotec use, or it could be an artifact of the types of activities that were reported in January (during the school year) versus July/August (during summer vacation), as I will discuss in section 2.2.3. The B interview data also reveal a possible source of inconsistencies in the A1 vs. A2 interview data, such as with Child 4, who reported a large

[14]One participant chose not to answer that question of the survey.

	Children's reports				Adult's reports		
Hours	**S**	**Z**	**%Z**		**S**	**Z**	**%Z**
Child 1	6	8	57%	Parent 1	4	11	73%
Child 2	5.5	9.5	63%	Parent 2	5	9	64%
Child 3	12	0	0%	Parent 3	11	3	21%
Child 4	8	6	43%	Parent 4	7	8	53%
				Parent 5	12	3	20%
Child 5	14	0	0%	Parent 6	12	1	8%
Child 6	15	0	0%	Parent 7	16	0	0%
				Parent 8	14.5	0.5	3%
Child 7	13	3	19%				
Child 8	13	0	0%				
				Parent 9	14	0	0%
				Parent 10	14.5	1.5	9%

Table 2.4: Language use by hour, reported by children and their parents, January 2019. The S column indicates the number of hours reported using Spanish, the Z column the number of hours reported using Zapotec, and the %Z column the percentage of reported time using Zapotec. Each boxed set of rows contains members of the same family (for example, Child 4 is the child of Parents 4 and 5). Some children's parents chose not to participate and some parents' children chose not to participate; I have reported each of these cases separately in order to preserve the anonymity of the participants. It appears that Parents 4 and 5 reported on the language use not of Child 4, but of their other children who did not participate.

increase in Zapotec use between A1 and A2. Child 4 also reported a significant difference in listening exposure (100%) vs. speaking (13%). It is possible that different interpretations of the A1 and A2 question of Zapotec "use" (as either listening or speaking) could have influenced the answers during the A interviews.

Considering the reported language use from children and their parents from the B interviews more closely, some interesting patterns emerge. Some parents and children seem to provide reports which are quite similar. In the first family unit, for example, both children and both parents reported Zapotec dominance (which is consistent with their reports of Zapotec dominance in the A interviews), though Parent 2 reports less Zapotec speaking for Child 2 than Child 2 self-reports. Similarly, Child 13 and Parents 14 and 15 report some Zapotec listening and speaking, though both parents estimate greater listening exposure to Zapotec than the child. Child 5 and Parent 6 also have similar reports, but with the parent

	Listen			Speak				Listen			Speak		
Child	**S**	**Z**	**%Z**	**S**	**Z**	**%Z**	**Parent**	**S**	**Z**	**%Z**	**S**	**Z**	**%Z**
Child 1	5.5	7.5	58%	6	7	54%	Parent 1	3.5	11.5	77%	3.5	11.5	77%
Child 2	2	11	85%	2	11	85%	Parent 2	2.5	11.5	82%	6.5	7.5	54%
Child 4	0	16	100%	14	2	13%	Parent 4	3.5	9.5	73%	7.5	5.5	42%
							Parent 5	6	10	63%	10	6	38%
Child 5	9	0	0%	9	0	0%	Parent 6	12.5	0.5	4%	13	0	0%
Child 7	9	5	36%	7	9	56%	Parent 11	11	3	21%	13	3	19%
Child 8	4	11	73%	10	5	33%							
Child 9	10	2	17%	13	1	7%	Parent 9	9	4	31%	15	0	0%
							Parent 10	8	7	47%	15	0	0%
Child 10	11	0	0%	11	0	0%							
Child 11	12.5	1.5	11%	14	0	0%	Parent 12	4	11	73%	15	0	0%
Child 12	2.5	9.5	79%	10	2	17%	Parent 13	1	12	92%	2	11	85%
Child 13	10.5	2.5	19%	9.5	3.5	27%	Parent 14	6.5	5.5	46%	7.5	4.5	38%
							Parent 15	4.5	8.5	65%	12	1	8%
Child 14	13	2	13%	15	0	0%	Parent 16	12	2	14%	15	0	0%
Child 15	8	1	11%	7.5	1.5	17%							

Table 2.5: Language use by hour, reported by children and their parents, summer 2019. Each boxed set of rows represents a family unit (for example, Child 1 and 2 are the children of Parents 1 and 2, and Child 5 is the child of Parent 6). In this table, each parent reported on the child listed in the same row, with the exception of Parents 10 and 15, who reported on Child 9 and 13 respectively. Parent 5 reported on a child who did not participate in the study. In one case, two children and one parent from a single family participated. I have not grouped those two children into the same household in order to preserve the anonymity of their data. For each hour the participants reported on the language they listened to and the language they spoke. The S column indicates the number of hours reported listening to or speaking Spanish, the Z column the number of hours reported listening to or speaking Zapotec, and the %Z column the percentage of reported time listening to or speaking Zapotec.

estimating more Zapotec listening exposure than the child. Finally, Child 14 and Parent 16 both report limited Zapotec listening exposure and no Zapotec speaking. In other cases, child and parent reports differ widely. With Child 7 and Parent 11, for example, while both report some Zapotec listening, the child reports dominance in Zapotec speaking, while the adult reports only some speaking. The reverse can also be seen with Child 4/Parent 4 and Child 12/Parent 13; in both of these cases, parents report their children speaking more Zapotec than the children report. Finally, Child 11 and Parent 12, while in agreement that the child does not speak any Zapotec, differ greatly in how much Zapotec the child hears, with the parent reporting a heavy dominance of Zapotec input and the child reporting only a small fraction of Zapotec input.

Finally, it is worth considering differences in reporting among members of the same household. For example, Child 11 and Child 12 report very different listening input—11% versus 79% Zapotec—despite living in the same household. This could represent a true difference in language input if children are being spoken to differently, or it could represent a difference in their language ideologies and perceptions of their linguistic environment. Similarly, I find it striking that Parent 12 reported no Zapotec speaking, while Parent 13 reported heavy Zapotec dominance (85%), especially given my personal observations of the two children in question being spoken to in similar ways and doing similar activities, at least while I was present.

Conclusions. The greatest takeaway provided by these data is that Zapotec language use in Teotitlán varies significantly from family to family and from individual to individual. In some families, Zapotec language use remains robust, with children both hearing and speaking Zapotec most of the time. In other families, Zapotec exposure is limited, and Zapotec is not spoken by children. In yet other situations, the picture is more complicated, with varying reports of children using Zapotec to different extents. These reports, of course, are not without bias, and may be influenced by a number of factors, including what respondents considered "speaking Zapotec" to require. Some may consider the use of a word or phrase in Zapotec to describe "speaking Zapotec," while others may only consider monolingual Zapotec conversation—or only Zapotec conversation devoid of Spanish borrowings—as Zapotec speech.

The differences in perceived language use between children and parents is important to consider, particularly with regards to children who perceive themselves as speaking more Zapotec than their parents do. If parents do not consider their children's (attempted) Zapotec speech to 'count' as Zapotec speech, this could result in conflict between children's self-identification as successful Zapotec learners and Zapotec speakers and their parents' identification of them as non-Zapotec users, which could in turn reduce learner investment. Similarly, if parents perceive that their children receive large amounts of Zapotec language input through listening, they may have expectations that their children will acquire Zapotec easily. If, however, children are not really so exposed to Zapotec language input, they may not be able to acquire the language in the way that their parents expect, again resulting in a mismatch between parent and child expectations that can negatively affect learner investment. I will explore these mismatches in more detail in the following section.

Another fact to consider is that reports of Zapotec listening exposure were almost always higher, with only three children reporting more time speaking Zapotec than hearing Zapotec, and no adults reporting more Zapotec speaking than listening. As I mentioned before, this fits with other reports around the world of language endangerment situations where children are exposed to a language but do not acquire it. At the same time, children's reported Zapotec use either remains steady over time (Child 1) or increases (Child 2, 7, 8), and only decreases in one case (Child 4), where some of this decrease may be due to a shift in reporting Zapotec listening versus Zapotec speaking. This provides some encouragement as to the success of language revitalization in Teotitlán, though this will be discussed in much greater detail in Chapter 6.

2.2.3 Language use by domain

Discussion of results. To analyze data on language use by domain from the hourly language use reports, I coded reported activities into general groups: sleeping, getting ready, visiting others, in transit, eating meals at home, doing chores, at recess, visiting the market/store, playing/relaxing, doing homework, and at school.[15] I then looked at whether or not each participant reported any time spent on a given activity, and if so, what proportion of that time was reportedly spent speaking Zapotec. The results are shown in table 2.6.

In the January interviews, more Zapotec is reportedly used in activities that frequently involve conversation with a parent or other adult: getting ready, visiting others, while in transit around town, eating meals, and doing chores. Conversations with participants about Zapotec use during school recess revealed that that some parents come during recess to deliver their child hot food, at which time some parents and children speak together in Zapotec. For this reason, I separated "at recess" from "at school," and discovered that while Zapotec is frequently used during recess, it is reportedly never used during other parts of the school day. Visiting the market or store sometimes involved Zapotec use, but at a lower rate than in other, more private settings such as in the home or with family. This is similar to commentary that I have heard from community members reporting that some children are ashamed to speak Zapotec while out in public, though I have observed those same children speaking Zapotec in their homes privately (this will be discussed more fully in section 5.2). It is notable that Zapotec was rarely reported for children while playing (either by themselves or with other children), which is indicative of a generational shift from Zapotec to Spanish.[16] Finally, there is very little Zapotec use during completion of homework, despite the presence of Zapotec in the home. Although the content of the homework is presumably in Spanish (as will be discussed in section 4.2.2, there is no Zapotec instruction as part of the regular school

[15]I included extracurricular courses under 'visiting others' and activities such as being alone, relaxing, and reading under 'playing/relaxing'. There is no television programming available in Zapotec, so I did not include the data on how much television was watched. I also did not include data on time reported as 'sleeping', as I assumed there was no language being used at that time.

[16]However, I will show some data in which children do use Zapotec while playing, both by themselves and with siblings, during the naturalistic recordings (section 5.2).

	January		Summer	
Activity	**%Z**	**No. respondents**	**%Z**	**No. respondents**
Getting ready	50%	4	14%	11
Visiting others	50%	2	13%	4
In transit	43%	7	25%	4
Eating meals at home	42%	8	20%	11
Doing chores	38%	6	39%	9
At recess	33%	6	0%	1
Visiting the market/store	33%	3	25%	2
Playing/relaxing	28%	8	30%	12
Doing homework	17%	6	0%	1
At school	0%	8	0%	2

Table 2.6: Self-reported language use by domain, January 2019 (A2 interviews) and Summer 2019 (B interviews). Each row represents a domain that participants reported. I then determined if the participant reported using mostly Zapotec or Spanish in that domain. %Z represents the percentage of respondents who reported using mostly Zapotec within that domain; the number of participants included in the calculation of that percentage is listed under 'No. respondents.'

day at any of the elementary schools, and Zapotec at the middle school has only begun very recently). It would be possible for children to discuss ideas brought up in the homework in Zapotec, but it does not appear that this happens, even in otherwise Zapotec-dominant households.

In the B interviews, which were collected during the summer break in July/August 2019, only two of the thirteen participants mentioned school as part of their daily activities (while in January, eight out of nine mentioned school). Given that school is a place where Zapotec is rarely spoken, one might think that more Zapotec use might be reported when school is not in session and students have more time at home with their families, where Zapotec was found to be more frequently used in the January interviews. It is notable, however, that the amount of Zapotec used in home situations such as getting ready and eating meals at home actually decreased from the January reports to the July/August reports. The decrease in Zapotec use during meals at home may be due in part to students who had reported Spanish use during the recess (lunchtime) meal at school now reporting Spanish use during that meal at home. There was also a decrease in reported Zapotec use during visits to others, which may reflect differences in who was visited during these two periods; visits to others in January were mostly to family members, while in July/August they included non-family members or other events such as extracurricular courses.

Participants in the A1 and A2 interviews were also asked what language they think children in Teotitlán use more in different situations. The results are presented in table

2.7. Considering the percentage of individuals who reported Zapotec use in each domain, the ranking of domains from most to least Zapotec use as reported by children matches the ranking of responses from adults, with two exceptions. Adults perceived children speaking less in Zapotec with neighbors than the children did, and they perceived children speaking more at church in Zapotec than the children did. Furthermore, adults generally reported less Zapotec use than did children (with Zapotec use at church being the only exception).[17]

The pattern of language use by domain shown here could be consistent with the idea that Zapotec is used more when speaking with adults than with peers, but unfortunately the data is not granular enough to report whether, for instance, when visiting a relative or neighbor, respondents were reporting on a visit to a child or an adult. For some activities we may infer that at least one adult is likely present: activities like walking in the forest and going to Tlacolula generally require an adult's presence. On the other hand, playing at home or talking on the phone do not. It is interesting to note the difference in Zapotec use between going to Tlacolula, another Zapotec town in the Valley several miles down the highway from Teotitlán, and Oaxaca, the capital city where Spanish is dominantly spoken.[18] Some participants did, however, note the importance of using Zapotec in Oaxaca as a way of communicating without Spanish speakers understanding what was being said. Another interesting area is the library, which (at the time of the interviews) was staffed by one bilingual Spanish-Zapotec speaker and one bilingual Spanish-English speaker. It was also the location where the Zapotec workshops were taking place. In contrast to self-reported Spanish dominance at school and while doing homework, the library was perceived of as a space where more Zapotec is used. This is likely due, at least in part, to the fact that Zapotec workshops were being held in that space.

I also asked participants' for their opinion on how difficult it would be for a child from Teotitlán to speak Zapotec in different domains, focusing on domains that were covered in the Zapotec language workshops (figure 2.1). I asked this question indirectly in an attempt to create an environment in which respondents felt comfortable reporting on language use to me, the Zapotec teacher. I thought that if they were asked to report on others' Zapotec use, they might be more willing to report outcomes that they might think I would find unsatisfactory than if I asked them to report about themselves directly.

Parents reported most Zapotec ease between children in the Zapotec workshop, while children reported most Zapotec ease while talking with someone they meet on the street. Interestingly, parents reported the most difficulty for children while talking with someone they meet on the street. This may be due to the types of interactions that children may have with people they meet on the street. As far as I have observed, Zapotec is often used for greetings between children and adults who meet each other on the street around town, but it is rarely used for more in-depth conversations, in which Spanish is more frequently

[17]There is a Zapotec-speaking priest from Teotitlán who sometimes gives sermons in TdVZ at the local Catholic church.

[18]Although few people from Tlacolula speak Zapotec at present—Lillehaugen 2003 reports no more than several hundred speakers, all over the age of 50—Zapotec speakers from throughout the Valley and the Sierra Norte congregate there for a weekly Sunday market, during which time many varieties Zapotec can be heard.

	Children	Adults
Greeting someone on the street	100%	85%
Visiting a relative	86%	80%
Visiting a neighbor	71%	50%
Walking in the forest	71%	70%
Going to Tlacolula	64%	60%
At the library	64%	55%
Playing at home	57%	55%
Talking on the phone	50%	35%
At church	36%	60%
Going to Oaxaca	29%	25%
Sending texts/chats	14%	10%

Table 2.7: Percent of responses from children (n=9) and adults (n=10) to the question, "Which language do you think kids in Teotitlán use more in each of the following situations?" reporting Zapotec during B interviews in January 2019.

used by children. These different types of interactions may not be classified in the same way by children (who may see them as Zapotec interactions) and adults (who may see them as Spanish interactions). Moreover, many individuals have made comments to me in informal settings about how children no longer use greetings in Zapotec on the street, and that this change is for the worse. In many cases, it appears that the use of the formal greeting, *xchang*, in which both participants grab hands, and younger people often bow their heads to older people, is serving as a proxy representing more traditional ways of being in Teotitlán. Conversations about the importance of using the greeting tend to also include discussions of how the greeting represents what it means to be Zapotec and to be a member of the community. The larger symbolic importance given to the greeting may have influenced parents' evaluations of children's use of greetings.

It is also noteworthy that parents report higher ease for talking in Zapotec with a relative or neighbor about weaving than do children. If parents perceive this as an area where speaking Zapotec should be easy, this could affect children's willingness to try speaking—and risk failing—in this environment, where children perceive greater difficulty.

Finally, I asked more directly for participants to report on the frequency with which they use Zapotec in several domains that were covered in the Zapotec language course (figure 2.2). Both children and parents reported the lowest Zapotec use when children talk with their friends, and this is also confirmed in the naturalistic recordings discussed in section 5.2. Children reported the most frequent Zapotec use while greeting someone on the street, as well as frequent Zapotec use while hiking the Picacho mountain (an important local destination, which we visited on a field trip during January 2019, described in section 4.6) with their parents. Parents similarly reported frequent Zapotec use while hiking Picacho, along

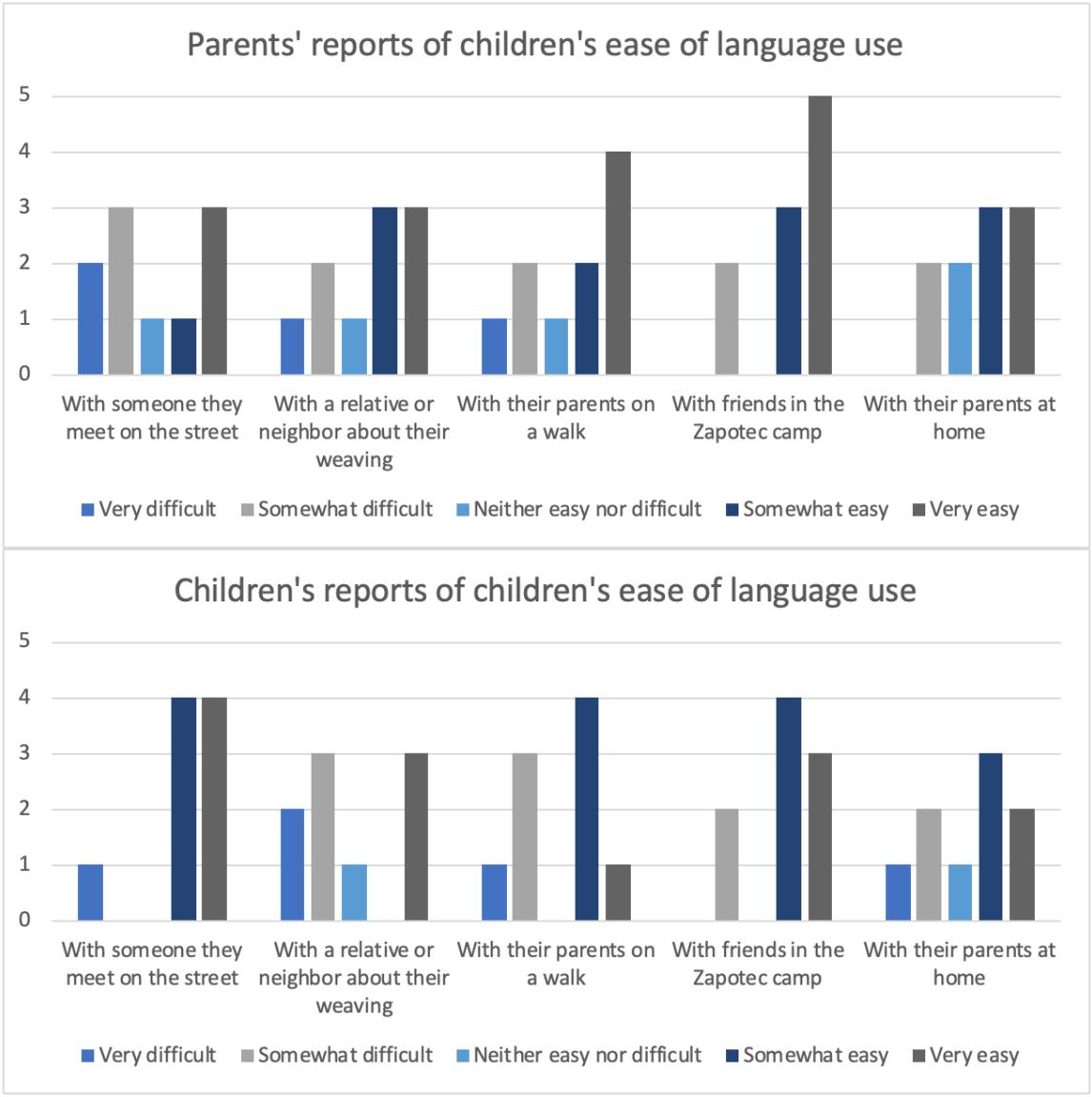

Figure 2.1: Reported ease of Zapotec use among children in Teotitlán by domain according to parents (top, n=10) and children (bottom, n=9). Participants were asked how difficult they thought it would be for a child in Teotitlán to use Zapotec in each of the domains listed along the x axis. The bars represent counts of the number of responses per category, from 'very difficult' on the left side of each domain to 'very easy' on the right side of each domain.

with time spent in the market. However, parents reported low frequencies of Zapotec use when children greet someone on the street. This difference between parents' and children's reports of Zapotec use when children greet someone on the street may be due to the reasons mentioned above: either differences in what is perceived to 'count' as Zapotec in this context (whether a word of greeting is sufficient or if a larger conversation is required) or effects of the larger symbolic importance of greetings as a proxy for a sense of Zapotec identity.

In the B interviews, I asked a more open-ended question regarding domains of language use: "Think of the spaces that you use each day. Which spaces seem more like Zapotec spaces? Which seem more like Spanish spaces?" Children reported almost all spaces being more Spanish spaces. All 12 students who mentioned school reported it as a Spanish space, 6 of 8 reported the library as a Spanish space, 5 of 6 reported the market as a Spanish space, and 4 of 6 reported church as a Spanish space. Half of the 10 students who mentioned their home reported it as a Spanish space, as well as half of the 4 students who mentioned their grandparents' homes and farming areas.

Adults reported a very different view of which spaces were Zapotec, with 6 of 7 reporting the home as a Zapotec space, 5 of 6 reporting the center of town as a Zapotec space, and 3 of 4 reporting the market as a Zapotec space. Adults also mentioned celebrations, work, farming, and visiting grandparents as Zapotec spaces. Only school and interactions with outsiders were reported as mostly Spanish spaces, as well as a 50-50 split in Zapotec versus Spanish use at church (n=4).

Finally, given that intergenerational transmission from parent to child is often considered crucial for sustainable language transmission, I asked participants in the A interviews to think about the five people with whom they speak most frequently, and in what language they speak. No children reported using only Zapotec with their parents, though one reported using only Spanish. Three of eight reported using mostly Zapotec with their fathers, and four of seven using mostly Zapotec with their mothers. In the B interviews, I asked participants what languages they use with their parents/children directly. Two parents reported speaking only Zapotec with their children.[19] Three parents reported speaking more Zapotec than Spanish, including two who commented that this was a recent shift towards Zapotec that they had made in an effort to encourage their children's Zapotec acquisition. Two parents reported speaking more Spanish, and the remaining 6 parents reported speaking both languages. Children, on the other hand, reported much greater use of Spanish, with four reporting that they speak only Spanish with their parents and three reporting more Spanish than Zapotec. Five reported speaking both languages with their parents, and only one child reported speaking only Zapotec with their parents, along with one child reporting using more Zapotec. These results are summarized in table 2.8.

Conclusions. Overall, the data presented here on reported language use by domain show a complicated picture. The most robust finding that can be reported (unsurprisingly) is that school is a domain in which Spanish dominates without question. Furthermore, the

[19]One of those parents was the parent of child 12, who interestingly reported hearing Zapotec only 11% of the time.

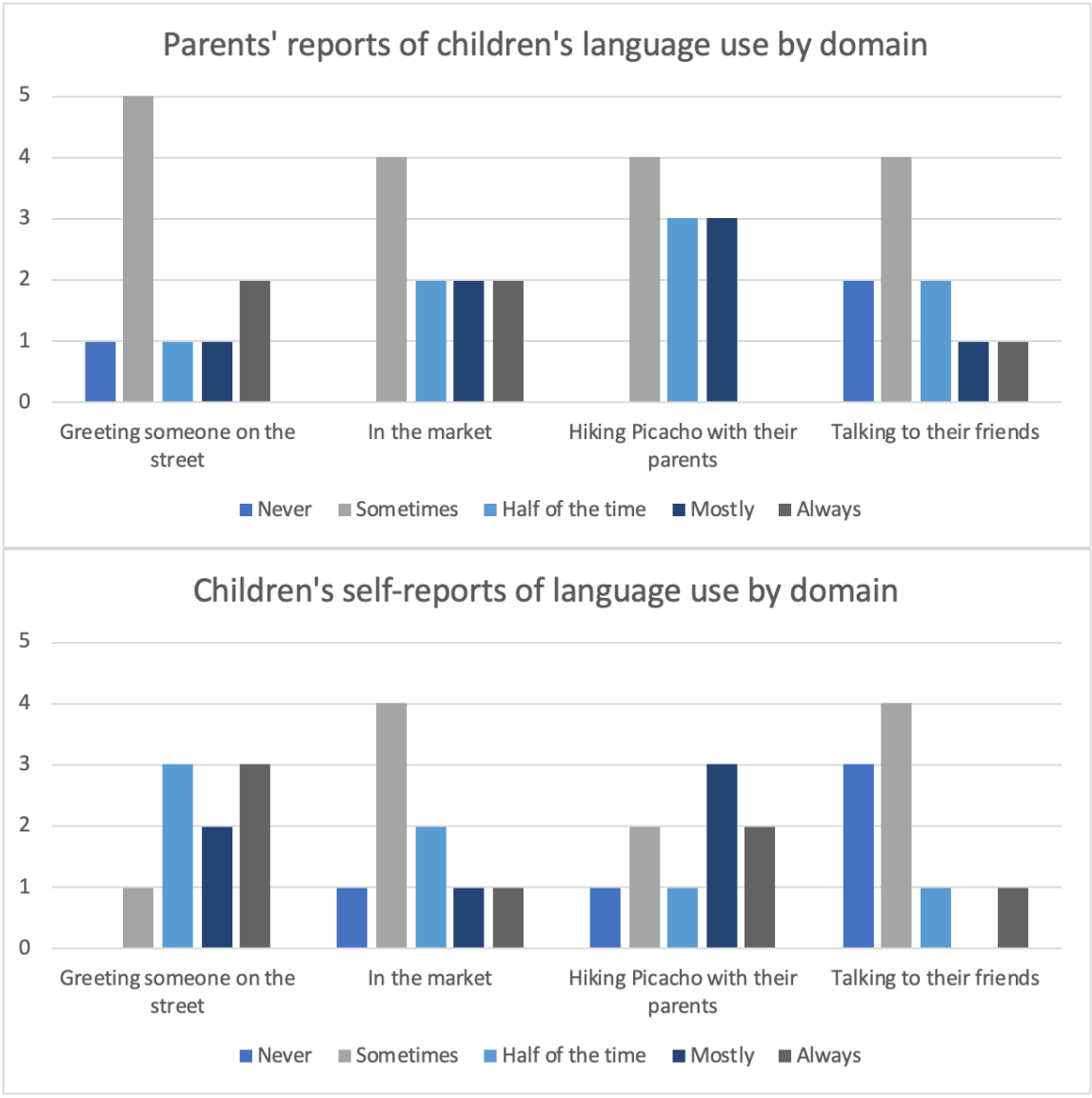

Figure 2.2: Reported frequency of Zapotec use by domain. The results include parents' reports of their children's Zapotec use (top, n=10) and children's self-reports of their own Zapotec use (bottom, n=9). The bars represent counts of the number of responses per category, from 'never' on the left side of each domain to 'always' on the right side of each domain.

	S Only	More S	Both	More Z	Z Only
Parents	0	2	6	3	2
Children	4	3	5	1	1

Table 2.8: Reported language use between children and parents from Interview B (summer 2019). Parents (n=13) were asked what language(s) they speak with their children and children (n=14) were asked what language(s) they speak with their parents. Responses included Spanish (S) only, more Spanish, both languages, more Zapotec (Z), and Zapotec only.

data suggest that children use more Zapotec when speaking with their parents and other family members than when speaking with peers or outsiders. Nevertheless, there is a shift in language use between adults and children, notable in the way that parents report speaking Zapotec with their children much more than their children report speaking Zapotec with their parents. It appears that language use in Teotitlán is generally following a pattern of language shift commonly seen in communities where speakers are shifting from a minoritized to a majority language across generations. Finally, differences in reported language use between children and adults suggest that adults are not fully aware of the ways in which Zapotec language use is shifting in Teotitlán. The implications of this on the Zapotec language workshops will be discussed in the following section.

2.2.4 Connection to language workshops

As part of the PAR methodology used in this research, the collection of data on reported language use was driven by questions generated from within the community regarding how Zapotec is and is not being used by children in Teotitlán, with the goal of gathering information that would serve to refine Zapotec language revitalization programming in Teotitlán. At the same time, the Zapotec language workshops were being implemented, and presumably these workshops have an effect on children's language use and language ideologies that may be reflected in their reported language use. Unfortunately, the lack of clean data showing a picture of language use before and after the language workshops makes it difficult to make strong claims about the effects of the language workshops on language use. However, the ongoing collection of data on language use and attitudes has allowed for continued refinement of the Zapotec language workshops so that they better fit the needs of participants in real time.

Perhaps the strongest evidence that the language workshops had an effect on students' language use is can be taken from Child 4's increase in reported use of Zapotec from the A1 to the A2 interviews, paired with the fact that the increase was reported during weaving-related activities, which were covered as part of the course. But at the same time, there is a decrease in reported Zapotec use according to other measures, including decreases in

self-reported language use in the hour-by-hour reports within the domains of getting ready, visiting others, in transit, eating meals at home, and visiting the market/store.

On the other hand, the surveys have certainly informed future programming for the language workshops. Most strikingly, the differences in perceived Zapotec use between adults and children show a disconnect in how Zapotec is perceived between the generations, and this is something that future Zapotec language workshops will seek to address by creating more environments for children to not only be exposed to Zapotec language use, but to feel confident in speaking Zapotec with the adults around them. This includes preparing learners to engage in Zapotec in spaces that adults already perceive to be Zapotec spaces—the market, the home, the town center, and celebrations—but which children do not yet perceive to be spaces where they can speak in Zapotec. Children's hesitancy to use Zapotec in these spaces may be related to their perceived lack of authority within these spaces: if children feel that their use of Zapotec is unauthorized or will be met with negative reactions from those around them, they may not be invested in Zapotec language use in these contexts. To help build children's sense of authority as emergent Zapotec speakers, future workshops will involve greater use of activities like student-generation of learning materials (section 3.5.2) that help to build this sense of authority.

Furthermore, stakeholders in the language workshops (myself included) hope to address the tendency that adults had to report lower Zapotec use among children in certain domain than the students' self-reports, as well as differences between adults' perceptions of how difficult it is for children to speak Zapotec and children's perceptions of that difficulty, through discussion with all participants and families. Discrepancies in expectations between adults and children can affect learner investment. If a learner achieves something that they perceived as difficult, but that achievement is not perceived as difficult by their parents, this may result in a mismatch between self-perception and others' perception that could lead to a lack of investment. Similarly, if parents think a task is too difficult for their child, they may not encourage the child to achieve it, again affecting learner investment. As part of the process of participatory action research, it is beneficial to discuss these issues with all stakeholders to maximize alignment of expectations among all participants, and the interviews have certainly served as a fruitful way to unearth some areas for further exploration.

2.3 Conclusions based on reported language use

Overall, the picture of language use that can be created through examination of the interview data remind us of the diversity of experiences held by individuals in Teotitlán. Though some families appear to have a robust pattern of Zapotec dominance, with children and parents reporting more use of Zapotec than Spanish throughout the A and B interviews, other families showed more signs of language shift. In some families, Zapotec was less frequently used, with children and parents both reporting that children never spoke Zapotec in any contexts. Even within families, some children and some parents reported very different

patterns of language use between individuals in the same household. This reminds us that in addition to how much a child is exposed to Zapotec, that child's own investment in Zapotec learning and use can play a large role in their acquisition and use of the language.

Furthermore, when different children take on different roles, their linguistic environments may change. When children begin to attend school, for example, a large portion of their day becomes consumed by Spanish use. Moreover, children's Zapotec exposure outside of school depends heavily on whether children are sent outside the home (for activities such as music and other extracurriculars, conducted largely in Spanish) or asked to stay at home (often to perform chores within the household, conducted largely in Zapotec). Even within a household, these duties differ from child to child. For example, in one family, parents reported heavy Zapotec use for a female child who spent significant amounts of time weaving, cooking, and cleaning, while a male child who spent time doing athletic training with a team spent less time using Zapotec. I did not collect data on the socioeconomics of participants, but differences in the activities children do may also be affected by economics: more affluent families may have more opportunities to send their children to private schools or other extracurricular classes outside Teotitlán, while less affluent families may rely on children helping with household activities, farming, or weaving.

Investment may also be affected by children's perceived autonomy and authority to use Zapotec. If children find themselves in contexts where they can use Zapotec and be affirmed in their identities as successful Zapotec users, they may have increased investment in continued use of the language. On the other hand, if their attempts at Zapotec use are met negatively, they may wish to avoid future Zapotec use as a result. At the same time, children's authority to speak and be heard is not a given. In fact, parents have commented on situations in which children refrain from speaking Zapotec until they are adolescents, at which point they are perceived as having the authority and positioning within the community to contribute to conversations, and as a result they begin to use Zapotec within public conversations (see section 5.2.2.3 for further discussion). However, if children have not been sufficiently exposed to Zapotec, they may reach adolescence without the language skills required to participate in community discussions; this experience was reported by at least one parent, who noted that despite growing up in Teotitlán, she did not learn to speak Zapotec, and now feels left out of some community discussions. Language revitalization initiatives, then, might consider finding spaces for children in which they can feel authorized to use the Zapotec language at an earlier age, and thus grow their Zapotec language skills, so that when they reach adolescence they are prepared to join in larger community discussions.

The data here also expose differences in how adults and children view Zapotec use in Teotitlán at present, with adults maintaining the view that Zapotec dominates in some domains where children perceive greater Spanish use. This may be reflective of a shift in language use occurring between the two generations. Differences in the perceived difficulty of Zapotec language use is also notable, and highlighting and discussing these differences may help parents and children to better set expectations for Zapotec learning. Furthermore, differences in perceived frequency of Zapotec use, with children reporting higher Zapotec use in certain domains than their parents report them using, suggests that children's Zapotec

use may not be fully appreciated by adults. This lack of appreciation may have negative consequences for learner investment. Based on the data here, such conclusions are a bit speculative; however, I will examine these possibilities in greater detail, alongside other evidence, in Chapter 6. In the next chapter, I turn to an examination of how this data, alongside social, historical, and other factors, might inform the strategies that will be most effective in pursuing language revitalization—in Teotitlán and in other contexts.

Chapter 3

Factors in language revitalization design

> "Las lenguas son importantes pero son mucho más importantes sus hablantes. Las lenguas mueren porque sus hablantes son discriminados y violentados."[1]
>
> - Yásnaya Elena Aguilar Gil (February 26, 2019 addressing Mexico's National Congress, reported in Barragán 2019)

In this chapter, I seek to overview a set of key factors that I argue should be considered in designing, implementing, and evaluating language revitalization initiatives. Inspired by the words quoted above from language activist Yásnaya Elena Aguilar Gil, a speaker of Ayuujk (Mixe) from Oaxaca, Mexico, I propose a set of factors that extend beyond language acquisition outcomes and linguistic factors and instead look at larger institutional, societal, and ideological forces that impact the speakers of marginalized languages. On the one hand, I advocate for the consideration of forces that suppress Indigenous people and communities, and form the root causes of language loss. At the same time, I also advocate for a consideration and valuation of the expertise and resources communities can and do bring to the pursuit language revitalization. Although the process of incorporating detailed information about the people who are affected by language loss and who participate in language revitalization requires immense effort, attention to detail, and inclusion of nuanced information, I believe that such work is necessary to understand the factors that support and inhibit progress in language revitalization.

In what follows, I will first lay out the theoretical groundwork that I believe is necessary to understand why the factors I propose are important. Section 3.1 defines language revitalization and provides an overview of reasons for language endangerment and motivations for pursuing language revitalization. This section also highlights differences between language teaching for language revitalization versus other types of language teaching and learning. In

[1] "Languages are important, but much more important are their speakers. Languages die because their speakers experience discrimination and violence."

section 3.2, I describe and justify the factors that I propose are important to consider in the process of undertaking language revitalization initiatives. Section 3.3 highlights some of the stakeholders who may be involved in language revitalization, and section 3.4 presents some common assessment frameworks that have been used. Finally, section 3.5 describes the three main methodologies on which I rely in conducting Zapotec language revitalization before I conclude the chapter in section 3.6.

3.1 Situating the field of 'language revitalization'

Before presenting the key factors affecting language revitalization initiatives, I would like to situate the field of 'language revitalization' by defining precisely what I mean by using the term 'language revitalization' itself. To begin, in section 3.1.1, I give an overview of a variety of terms employed by those writing about the broad topic of 'language revitalization' to describe this area of study in whole or in part. I then provide and justify the definition that I use throughout this dissertation. In section 3.1.2, I outline some of the key reasons that languages become endangered in the first place, since, as I will argue, an understanding of these root causes is essential to selecting, implementing, and evaluating language revitalization initiatives. Furthermore, the specific causes of endangerment within a given community will affect the types of programs that are best for that situation, as well as have effects on the types of outcomes one might expect. In section 3.1.3, I highlight some motivations for pursuing language revitalization. Finally, in section 3.1.4, I expand on Hinton's (2011) typology of the differences between different types of language learning (majority, foreign, heritage, and endangered language learning). Hopefully, by highlighting areas of similarity, this section will encourage expanding collaboration in areas of overlap between experts in language revitalization and other types of language teaching, while also justifying the need to examine endangered language teaching as a unique exercise rather than a subset of any other type of language teaching due to the unique circumstances under which language revitalization is carried out. The background information presented in section 3.1 overall thus seeks to provide the necessary context required for understanding the key factors of consideration in choosing and implementing successful programs for language revitalization that will then be presented in section 3.2.

3.1.1 Defining 'language revitalization'

In order to develop a set of key factors in 'language revitalization', it is important for me to clarify what I mean 'language revitalization'. I take a relatively broad view of what falls under the category of 'language revitalization' such that it includes all activities whose effect (or intended effect) is to promote the valorization or use of a marginalized language, whether it is one of the goals of an activity or whether it is a secondary effect of an initiative with a different goal. This definition focuses on the *process* of revitalization by laying out what I consider to fall within the category of language revitalization rather than asserting

any definition of what 'successful' language revitalization should look like, as 'success' can be defined differently in different revitalization contexts based on community goals. I define 'language revitalization initiatives' as any actions, activities, or programs with goals including language revitalization (as opposed to other activities where language revitalization may occur as a secondary effect, but is not not a goal of the initiative).

Other authors take a narrower view of language revitalization. For example, Hinton (2001) defines language revitalization as efforts to increase the number of speakers or the contexts of use of a language. Hinton, Huss, and Roche (2018) expand this definition to include any activities that "*increase* the presence of an endangered or dormant language in the speech community and/or the lives of individuals" (p. xxvi), thus shifting the defining feature of language revitalization from increasing *use* to increasing the *presence* of a language. Nevertheless, even the expanded definition is focused on language itself rather than efforts to create extra-linguistic effects such as changes in attitudes towards the language in question. One could argue that extra-linguistic changes, such as more positive attitudes towards a language, may result in increases in the presence or use of that language, but this nevertheless seems to fall outside of the main focus of these definitions of language revitalization. On the other hand, I wish to center revalorization as falling squarely within the definition of language revitalization used in this dissertation.

Leonard (2012) proposes a new term, 'language reclamation,' to encompass a larger set of efforts to promote minoritized languages that explicitly incorporate elements beyond language itself. He defines 'language reclamation' as "a larger effort by a community to claim its right to speak a language and to set associated goals in response to community needs and perspectives" (p. 359). Thus, for Leonard (2012), language reclamation includes an explicitly political element of decolonization and self-determination. While this definition overlaps in important ways with my use of the term 'language revitalization' in that it includes extra-linguistic aspects, I choose not to use this term (at least for Zapotec language workshops) because it is by definition limited to community-internal efforts, and I will discuss some efforts involving individuals from outside the community.

In a similar vein to Leonard (2012), Henderson et al. (2014) describe a process of language revitalization that does not focus directly on language in its own right, but rather targets the root causes of language shift, such as (in their specific example) a lack of access to healthcare services in Indigenous languages. Through providing such services in an endangered language, the language is promoted and language use can increase. Thus, the effect is language revitalization, though the motivation is to provide a necessary service—such as healthcare—for Indigenous language speakers. Although in such a case, use of the language is somewhat of a side effect of a larger program, this type of initiative nevertheless falls under the definition of 'language revitalization' I will use in this dissertation, and because increasing use of the language was one of the goals of the program, I would consider this a language revitalization initiative.

Other authors employ various terms to distinguish between different types of language revitalization. For example, some authors use the term 'reversing language shift' (Fishman, 1991) when a language is still relatively vital (Hinton, 2001), though others view this phrasing

as too weak when the desired outcome is not only to *reverse* language shift, but to *increase* the use of the language into new domains. Hinton et al. (2018) note that, 'language reclamation' has been used to describe situations where the language involved is not currently being spoken (Hinton et al., 2018). Hobson (2018) notes that 'language renewal' has been used to describe situations where semi-speakers of the language remain. For the purposes of this project, however, I will not rely heavily on these terms distinguishing between types of language revitalization, as the borders between such situations are fuzzy, and I attempt to provide a comprehensive overview that includes all of these various situations.

3.1.2 Reasons for language endangerment

In order to situate language revitalization in the broader contexts in which it has been undertaken, it is crucial to understand a number of factors that have led to language endangerment in the first place, as understanding the root causes of language endangerment can be helpful in strategizing how language revitalization initiatives could push back against the forces that lead to endangerment. The main reasons commonly cited in the literature are briefly described below. I have separated them into seven main categories, but these categories are not entirely separable, as factors in one area (such as official policies of language suppression) may affect other areas (such as ideologies about the suppressed language).

Loss of speakers through genocide. Unfortunately, one cause of language endangerment is the loss of speakers through genocide (Sasse 1992, Skutnabb-Kangas 2018). Skutnabb-Kangas (2018) cites the *United Nations International Convention on the Prevention and Punishment of the Crime of Genocide* (United Nations, 1948), which includes a number of actions under the definition of genocide:

1. Killing members of the group
2. Causing serious bodily or mental harm to members of the group
3. Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part
4. Imposing measures intended to prevent births within the group
5. Forcibly transferring children of the group to another group

Within communities whose languages are endangered, one or more of these criteria of genocide are often met. Within settler-colonial societies, members of Indigenous groups were and continue to be killed (Skutnabb-Kangas, 2018), whether through the direct actions of governments or the actions of individuals with the tacit support of governments, in order to make way for colonial settlement on Native lands and extraction of natural resources (Garrett et al., 2019). These genocidal practices certainly cause "serious bodily and mental harm" to surviving members of groups affected by such policies and actions.

Furthermore, many Indigenous groups have suffered forced sterilizations that also fall under the definition of genocide. Ralstin-Lewis (2005) reports that in the United States in the late 20th century, "Native women seeking treatment in Indian Health Service (IHS) hospitals and with IHS-contracted physicians were allowed neither the basic right of informed consent prior to sterilization nor the right to refuse the operation...from 1970 to 1980, the birthrate for Indian women fell at a rate seven times greater than that of white women" (p. 72). By preventing communities from having and raising children, the vitality of the language was most certainly affected, as fewer children were present to learn it.

Finally, educational policies have been (and continue to be) genocidal as well, specifically under points 2 and 5 above (Skutnabb-Kangas, 2018). In educational institutions like boarding schools in the US and Canada, students were physically and emotionally punished for speaking their languages (McCarty & Watahomigie, 1998).

Some may wish to highlight a distinction between physical genocide (such as killing members of a group) versus cultural or linguistic genocide (such as imposing measures that forcibly prevent parents from passing down cultural or linguistic knowledge to their children). For instance, Skutnabb-Kangas and Phillipson (1995) defined 'linguicide' as "the extermination of languages," analogous to (but distinct from) physical genocide (p. 83); linguicide by their definition involves "killing a language without killing its speakers" (p. 87). But subsequent work has highlighted the ways in which physical and cultural genocide are often intertwined. I follow the arguments presented by Short (2010), who writes:

> "If the *genos* in genocide is a social figuration...*then genocide is the forcible breaking down of such relationships*—the destruction of the social figuration, which can be achieved in a variety of ways *not restricted to physical killing.* It could be through some form of 'ethnic cleansing' to ensure that people are no longer connected to each other or through suppression of language, religion, law, kinship systems, and other cultural practices through which the people maintain the relations among themselves, or through the imposition of severe conditions of life that break down social solidarities, etc." (p. 842; emphasis in original).

Short thus highlights the role of linguistic suppression in the act of genocide. Skutnabb-Kangas and Dunbar (2010) discuss this as well, arguing that while the UN considered but ultimately rejected the inclusion of a separate concept of 'cultural genocide' within their Convention, aspects of culturally suppressive policies such as submersion education may nevertheless be considered acts of genocide, though reaching that conclusion from a legal standpoint will first require that courts present decisions on relevant cases that may better illuminate how the law is to be interpreted. I am convinced by the arguments in Skutnabb-Kangas and Dunbar (2010), and consider 'linguicide' to be a method of carrying out genocide.

In the context of boarding schools in the US and Canada, children were forcibly transferred from one group to another as they were removed from their families and sent to live in institutions run by members of other groups. One goal of boarding schools was to enforce "uniformity in language" (Atkins 1992, cited in McCarty and Watahomigie 1998) by

separating Indigenous peoples from their languages and cultures and forcibly assimilating them into an English-speaking society. By using education as a means of forcing assimilation to the dominant culture through dispossession of Indigenous languages, dominant groups not only conducted genocidal practices that resulted in widespread language endangerment. These traumatic educational experiences also altered the relationships between affected communities and education, as education came to be associated with the harmful and violent practices of boarding schools. As will be mentioned in the discussion of historical and emotional factors below, this also has consequences for language revitalization.

The practice of using education as a way to force dominant languages upon Indigenous groups extended beyond the US and Canada. In interviews I have conducted with first-language Zapotec speakers in Teotitlán del Valle, a comment that often arises is that speakers were prevented from speaking Zapotec in public school as a result of being beaten by teachers and becoming embarrassed of using their language in the classroom. As a result, many parents did not speak Zapotec with their children as they were growing up, hoping to spare them this suffering by teaching them Spanish (the language used in schools).

The long and ongoing history of genocide faced by Indigenous peoples across the world is neither pleasant nor easy to confront, but without acknowledging its role in processes of Indigenous language endangerment, the effectiveness of language revitalization theory and practice will be limited in scope.

Official policies of language suppression. In addition to the genocidal aspects of official policies of suppression of Indigenous peoples, another cause of language loss is the implementation of official policies directly designed to suppress use of particular languages. While it seems that such policies must cause "serious...mental harm to members of the group" who are subjected to the policy (as appears evident from my interviews with Zapotec speakers who suffered under such suppressive policies in their assimilationist public school experiences), and thus be genocidal in nature according to the *United Nations International Convention on the Prevention and Punishment of the Crime of Genocide* (United Nations, 1948), I think it is important to address this issue in its own right as well.

Authors including baird (2013) discuss in detail how official policies prohibiting or punishing the use of Indigenous languages result in a decline in the use of the language. While these policies are usually tied up with larger genocidal policies, they also help to legitimize harmful ideologies, such as the false belief that only certain languages, such as English, are fit for use within contexts like schools or workplaces (Harlow, 1998). For example, English-only public education in the United States can be considered an official policy of language suppression, as it requires a removal of all non-English languages from the school. However, California's proposition 227 (a ballot initiative that proposed removing bilingual education from California public schools, and which passed by a landslide in 1998) was marketed not as a prohibition against other languages, but rather a guarantee of access to English (Crawford, 2000). The leader of the California ballot initiative, Ron Unz, titled his measure "English for the Children"; this made voting against the measure unappealing. Who wants to vote against access to English education? Furthermore, the label "established a false choice in voters' minds: *either* teach students the language of the country *or* give them bilingual edu-

cation" (Crawford, 2000, p. 30); this false dichotomy nevertheless lent legitimacy to the belief that other languages should not be used in education if children were to acquire English, despite extensive evidence that bilingual education may result in greater English acquisition overall (McCarty, 2011). Suppressive language policies, like proposition 227, masquerading as policies to support the growth and success of majority language learners help to legitimize policies of Indigenous language erasure and can contribute to negative ideologies surrounding endangered languages and bilingualism.[2]

Globalization and urbanization. As the world becomes increasingly globalized and urbanized, speakers of smaller languages face increasing social and economic pressure to acquire and use regional, national, and international languages in order to communicate and coexist with individuals outside of their traditional group (Grenoble, 2011). Furthermore, movement to urban centers can result in cultural dislocation, and members of Indigenous groups may take on the cultural practices of the groups that they come into contact with (Fishman, 1991). This may include a shift to a different language. As more and more members of Indigenous groups move away from the areas where their Indigenous language is dominant to places with other dominant languages, the population of people who are likely to learn the Indigenous language as a mother tongue is also reduced.

Pérez Báez (2014) addresses this issue for the case of speakers of San Lucas Quiaviní Zapotec (SLQZ). Approximately half of the population of San Lucas, Oaxaca has migrated to a sister town in the US, and while SLQZ remains the first language of children in San Lucas, most children raised in the US have at most a passive knowledge of SLQZ. Furthermore, many of these US-raised individuals return to San Lucas, bringing use of Spanish (and English) with them into domains like the home that were until recently SLQZ spaces. A similar situation is described by Falconi (2016) regarding members of the San Juan Guelavía community in Oaxaca and in Los Angeles, California. In San Juan Guelavía, as of 2010, 63% of community members spoke an Indigenous language, and the majority of adults were bilingual in Zapotec and Spanish. Similarly, most adult Guelavians who lived in Los Angeles at the time of the study were bilingual, although the author did not find any young Guelavians (under the age of 15) who used Zapotec regularly (though many had a passive understanding of the language). Furthermore, both children and adults residing in Los Angeles had a higher level of English proficiency than those residing in Oaxaca. Spanish, not Zapotec, is used as a lingua franca among the Latinx population in Los Angeles (which includes both Zapotec and non-Zapotec Latinx people), and Zapotec is mainly used as an "insider language of solidarity" among older members of the community (Falconi, 2016, p. 108). Furthermore, because adults in Los Angeles often have demanding work schedules, children spend less time exposed to adults speaking Zapotec. These are just two cases among many examples worldwide of shifts from an Indigenous language to a colonial language (or languages—Spanish and English) as a result of movement to urban centers and increased access to contexts where colonial languages are used.

While it is not necessarily the case that the acquisition of a new language or languages

[2]Official language policies affecting Mexico, and Teotitlán more specifically, are discussed in section 4.2.1.

will result in the loss of the Indigenous language (Dorian, 1998, p. 5), such a process has been documented in a wide variety of contexts, including the cases of San Lucas Quiaviní and San Juan Guelavía discussed above. In many contexts, shift to a more dominant language is accompanied by assignment of high prestige to the dominant language and low prestige to the minoritized language; the low prestige of a language may motivate speakers to dissociate themselves from it (as will be further examined in the discussion of negative language ideologies below). In the cases described here, English is the language that speakers report to have highest prestige, Spanish use remains stigmatized in the US, and Indigenous language use is doubly stigmatized (similar to the patterns described by Mohanty 2010 with respect to the languages of India).

Nationalism and industrialization. The ideals employed in order to establish nation-states with industrialized economies also present a threat to Indigenous languages. The practice of defining nation-states on linguistic grounds, which began in modern Europe and has been applied in many areas that were subjected to European colonial control (Dorian, 1998, p. 18) has motivated politicians to homogenize populations and present them as monolingual. Similarly, industrial production requires universal literacy in a common language in order to most efficiently integrate all potential workers into the industrial workforce. For these reasons, industrialized nation-states may find little value in the promotion of Indigenous languages, and often work actively to eliminate them.

Furthermore, the idea of 'one nation, one language' has sometimes extended to the idea of 'one cultural group, one language,' with consequences for diversity within a language group. Roche and Bum (2018) describe such a process in the case of Tibetan language revitalization, where they note that as a strategy for promoting the Tibetan language in China, there has been a trend towards *einbauization*, emphasizing the similarities rather than the differences between varieties of Tibetan as a means of achieving unity within the movement to promote Tibetan over more dominant languages such as Mandarin. The authors suggest that perhaps even language revitalization will ultimately result in the loss of linguistic diversity as a multiplicity of varieties are replaced by a singular standardized version of the language.

Socio-economic motivations. Related to the pressures of nationalism and industrialization at the level of the nation-state, at the individual level, socio-economic pressures on speakers may motivate them to acquire a regional, national, or international language in order to facilitate more lucrative integration into the labor market (Grenoble, 2011). Learning an additional language may increase an individual's competitiveness in the job market. Again, it is crucial to note that the acquisition of another language does not entail the loss of the first language (Crystal, 2000, p. 88; Dorian, 1998, p. 18), loss of the first language often occurs. Nettle and Romaine (2000) claim that the "pace and scope" of "voluntary shift" have "greatly increased since the Industrial Revolution" (p. 91). While the authors do not link this solely with socio-economic motivations, they cite both an example of a social motivation (a shift from Hungarian to German by women seeking to align themselves with a new status as German workers) and an economic motivation (shift from Hawaiian to English as a result of integration of native Hawaiians into a capitalist labor system). Harrison (2007) similar describes how socio-economic motivations often result in language shift, noting, "As

people in minority communities seek to advance in their societies, they often feel they must do so by assimilating, giving up ancestral languages and having their children speak only the national tongues" (p. 14). In Teotitlán, for instance, many individuals recount how their parents strove to speak only the nationally-dominant language of Spanish in the home, rather than Zapotec, noting the importance of Spanish fluency for seeking lucrative work outside of the community.

Negative language ideologies. Dorian (1998) describes the important influence that "ideologies of contempt" can have on Indigenous languages. Dorian notes that languages are particularly susceptible to "prestige transfer" (Joseph, 1987, p. 33, cited in Dorian, 1998, p. 7) the process by which the prestige attributed to a group is transferred from members of the group itself to some aspect that is representative of that group. For example, the high prestige associated with members of a group such as political rulers may be transferred from those individuals to aspects—such as language, physical appearance, or birthplace—that are representative of that high prestige group. Then, members of a lower prestige group might emulate those aspects in an effort to become associated with high prestige. Language is particularly vulnerable to prestige transfer and manipulation, as it is not an innate feature of an individual (unlike physical appearance or birthplace), but a feature that can be learned. Thus, members of a lower prestige group may learn a language that has acquired higher prestige through its use by high prestige groups in order to become associated with that higher prestige themselves.

But it is not only high prestige that can be transferred to language; low prestige can also come to be associated with a language spoken by members of low prestige groups. This results in what Dorian (1998) terms "ideologies of contempt" in which a language is viewed negatively through its association with low prestige groups. The spread of specific western language ideologies (described in detail in Dorian 1998) throughout the world has pushed forward the development of such "ideologies of contempt" along with other negative views of minoritized languages. One idea that has been spread through colonialism is that Indigenous languages are incomplete. In Mexico, for example, many people incorrectly believe that Indigenous languages are simply improper or informal dialects of Spanish.[3] Another misconception is that the disappearance of Indigenous languages is the inevitable result of "social Darwinism" (Dorian, 1998, p. 10). Under this view, Indigenous languages are not well suited to the demands of modern life, and instead will be inevitably replaced by better adapted world languages. Finally, Dorian (1998) describes a common belief that bilingualism is undesirable due to its onerous nature. Crucially, the belief is not simply that bilingualism is onerous at the societal level, requiring translation of documents etc., but also that it is onerous at the individual level, putting unnecessary pressure on human cognition. To be clear, empirical evidence points not to cognitive *difficulties*, but rather to cognitive *benefits* resulting from bilingualism (Trautner, 2019). Nevertheless, when negative ideologies

[3]As a result, there have been several initiatives launched in Oaxaca to teach people about the status of Indigenous languages as complete world languages, such as the *todas se llaman lenguas* project, which promotes the equal status of languages like Mixe, Zapotec, and Chatino alongside languages like Spanish, Chinese, and Russian (see section 4.2.4 for details).

about bilingualism are adopted by members of minoritized language communities who must use a more dominant language for survival, they may cease to use the minoritized language as the logical result of such beliefs.

Belief that language is genetically inherited. Finally, it is important to address the belief held within some communities that there is an unbreakable tie between members of the community and the language. This theme has arisen in my interviews in Teotitlán, as well as elsewhere in the literature (baird 2013; Pérez Báez 2014). Crystal (2000) describes how some individuals have a belief that being a member of an ethnic group makes it easier to learn the heritage language associated with that group, as if the language (or at least a propensity for learning the language) is genetically inherited. Crystal terms this belief the "genetic fallacy" (p. 110). Pérez Báez (2014) describes a similar belief held by many Zapotec speakers in San Lucas Quiaviní, Oaxaca that children are "born speaking the language associated with their place of birth" (p. 165). Thus, children born in San Lucas are believed to inevitably end up speaking Zapotec, and as long as children continue to be born in the town, the language cannot be in danger. Language may also be connected to a group through some spiritual belief (Henze & Davis, 1999). For example, jessie little doe baird writes that for her language, Wampanoag, there was a prophecy that the language (considered by Wampanoag people to be an animate being) would "go away but also promised that the language would return when it could be welcomed back" (baird, 2013, p. 20), which is consistent with a belief that the language is connected to the community through ways other than parents or elders transmitting the language to younger generations of children through speaking to them.

I do not wish to dismiss the perspectives of individuals who may have different beliefs from one another and or may define the concept of 'language' in ways other than how I am using it in this work, such as considering their languages to reside within the bodies of community members (whether or not they are speakers), or holding that language has animate or supernatural powers. Nevertheless, I find it important to distinguish the type of belief expressed by baird from that expressed, for example, by some people who I have talked to in Teotitlán. Some Teotitecos have expressed to me their belief that individuals hold the language in their blood, and thus the language can never be lost, pointing to examples of children exposed to the language from a young age who do not speak until they are around puberty (when they begin to participate in community responsibilities) as examples of this truth. But these same individuals express fears that use of the language is diminishing among young people, and children are not, on the whole, following the pattern of beginning to speak Zapotec around puberty. It seems that the belief that Zapotec language is passed on through blood may not be so tightly held by those individuals. Following Pérez Báez (2014), I believe that in such situations, it is useful to pursue ideological clarification in order to tease apart firmly held beliefs (like those expressed by Wampanoag people) from loosely held beliefs.

3.1.3 Reasons for pursuing language revitalization

In the previous section, I outlined a number of reasons for language endangerment, but it is important to return again to the focus of this dissertation, which is not language *endangerment*, but *revitalization*. Why, especially in the face of pressures that may lead to language loss, is language revitalization undertaken? As Hinton et al. (2018) highlight, language revitalization is often seen as a path "to healing, justice, and empowerment" (p. xxii). Let us consider those three motivations: language for healing; language for justice; and language for empowerment.

The role of language as a tool for healing remains underexplored in the academic literature (Whalen, Moss, & Baldwin, 2016), though some studies have been carried out. Taff et al. (2018), for example, provide qualitative support for the claim that Indigenous language use provides health benefits to language users. In their study, language users were asked to report on the role that language has played in their wellness, and one theme that emerged was the power of language learning in strengthening resistance to alcohol and drug addictions. Jaeci Hall, a Tututni descendant and language learner, described such an experience:

> "...I was at a ceremony to do with language where we were taught that alcohol does not serve. I made a commitment for four years to not drink because I wanted to be a good language learner. I wanted to be able to look at my elder and speak to him and not feel ashamed of myself. I'm thirty-three now and I haven't drunk since I was twenty. I think that's a pretty big sign of wellness. I use language every day and this is still part of the reason that makes me not want to drink, so that I can be able to be open to hear the spirits. I have to figure out our language from old notes because now I don't have any living fluent speakers to ask. I have to understand what the notes mean and sometimes that understanding comes from intuition. So what I've come to, is that I have to be clean. I seek out balance with the conscious thought that I am working on this language and that I have this responsibility and if I treat myself badly then I'm treating this language badly. If I treat myself badly then the spirits might know and maybe they won't talk to me. Maybe they won't give me their advice. I have this huge responsibility. I have a daughter and I want to have her learn this language, but if I don't receive it, if I'm not open to it, she won't even know that it matters. Our language is helping more than just me. I have a relative who was a severe alcoholic, and it's because of our language that he doesn't drink." (Taff et al., 2018, p. 687)

Jenni, Anisman, McIvor, and Jacobs (2017) provide similar support, reporting that at least three apprentices in the Master Apprentice Program indicated language learning as a factor in their sobriety. Quantitative data point to similar health benefits. Hallett, Chandler, and Lalonde (2007), for example, have shown a link between language use and decreased rates of youth suicide. Taff et al. (2018) also highlight the results of the *Social Justice Report* (2009) which found a link between greater connection to culture and language and

lower morbidity and mortality rates. According to the report, residents of a community where the mother tongue is used were less likely to have diabetes, less likely to be obese, and less likely to suffer from cardiovascular disease than Indigenous people in areas without strong mother tongue use.

Language revitalization can also be seen as part of a larger push for social justice. The United Nations Declaration on the Rights of Indigenous Peoples (United Nations, 2007) proclaims the right of Indigenous peoples to use their language(s) as well as the right to use language revitalization to bring languages back into wider use. Moreover, Aguilar Gil (2016) argues that linguistic rights are not simply about access to language and culture, but rather are required for equal access to all social environments: "Los derechos lingüísticos establecen las condiciones para el ejercicio de otros derechos"[4] (p. 46), making linguistic rights central to the attainment of human rights. Against the backdrop of nationalist movements that largely seek to promote a single national language, the use and promotion of multiple languages—including Indigenous languages—can be seen as an act of resistance against nationalist hegemony (Aguilar Gil, 2016).[5]

Language revitalization can also be empowering. Taff et al. (2018, p. 13, citing B. Cohen, 2001, p. 143) describe language loss as a process of disempowerment, while language revitalization is the reverse. While language oppression may cause "social ills," language can help communities to maintain cultural values (Taff et al., 2018, p. 13, citing B. Cohen, 2001, p. 143). Speakers may gain pride in themselves and develop a sense of community with other speakers and learners (Taff et al., 2018, p. 13, citing B. Cohen, 2001, p. 143). For instance, learners within communities like Teotitlán where the language remains in use can become empowered to participate in social interactions that take place in the Indigenous language that they may have been excluded from were they not Zapotec speakers.

Not only does language revitalization have the potential to spur empowerment, greater social justice, and enhanced wellbeing, but it is also something that is desired by many individuals and communities. In order to begin to strategize ways that revitalization can be effectively pursued, in the next section I provide an overview of how language revitalization relates to other types of language learning, so that previous research on language learning can be leveraged to provide useful recommendations for language revitalization.

3.1.4 Comparison of teaching and learning for language revitalization versus other types of L2 teaching and learning

It may be useful to lay out some key ways in with language revitalization is different from other types of second language teaching and learning reported in the literature.[6] Hinton

[4] "Linguistic rights establish the conditions for the exercise of other rights."

[5] Of course, such resistance may not always be possible to carry out safely (Ladefoged, 1992; Roche, 2019b).

[6] I refer to first language (L1) and second language (L2) in this chapter. However, I recognize that in some cases individuals may simultaneously acquire more than one "first" language, or they may learn a language

(2011) provides an excellent overview of some of these differences, which I will take as my starting point, adding some other points of comparison mostly stemming from the reasons for language loss outlined in section 3.1.2 above.

Hinton (2011) distinguishes between foreign language, majority language, heritage language, and endangered language learning. 'Foreign language' refers to a language that is the language of a group or nation that is not located within the nation where the learner is learning the language. For example, students of French or German learning in the United States would be 'foreign language learners' as these languages are mostly spoken in nations outside of the US. 'Majority language' on the other hand refers to learners acquiring the majority language of the nation in which they are residing; English learners in the US are 'majority language' learners. Individuals learning a 'heritage language' are those who had some exposure to a language other than the majority language in the home, but did not fully acquire that language as a child. Finally, 'endangered language' refers to those languages which are at risk of not being passed on to new generations of speakers. I will use these same categories and expand upon some of the observations presented by Hinton (2011).

Language teaching and learning goals. For foreign language teaching, the goal is usually to teach learners communicative skills in a language used in a society that is not their own. These skills will often include not only understanding and speaking the language, but reading and writing, as well as gaining an understanding of key cultural aspects of the society (or societies) using the target language. The goals are similar in majority language teaching, though in cases where individuals have moved to a place where they do not speak the language, the goals of the program may be organized in a way that teaches skills most important for survival in the society first. Such urgency is generally not present in foreign language teaching.

Heritage language learning generally has a communicative goal, much like foreign and majority language learning. In addition, all three types of language learning often target a standardized or prestigious form of the target languages. Many heritage learners have some abilities in the target language, but they may speak a non-standard dialect or not yet be literate in the language; heritage language teaching often seeks to address such gaps and make heritage language learners able to operate in formal and academic registers in their language.

In contrast, endangered language teaching programs (while often seeking some communicative goal) are oftentimes not geared towards fluency in the target language (Grenoble, 2011; Hinton, 2011; Hinton et al., 2018), as in many cases there are few or no speakers with whom to communicate should learners acquire the language (Bommelyn & Tuttle, 2018; Hinton, 2001; Zahir, 2018), or speakers of the endangered languages share a second language in common with language learners (*Plan Municipal de Desarrollo: Teotitlán del Valle*, 2010), allowing for communication without learning the endangered language. Thus, program goals

beyond their "second" language. I will use L1 to describe, broadly, a language learned at home from a young age to the point of fluency (i.e. a user is able to express themselves as they wish in the language), and L2 to describe a language learned either later in life or in the home, but not to the point of fluency.

are often oriented around linguistic and cultural reclamation (Grenoble, 2011; Hinton et al., 2018). For example, goals may include learning key words and phrases that a learner can use to symbolically mark their membership in a group, or learning how to speak in specific domains (such as in the kitchen or during ceremonies). While communication is a possible goal for endangered language learning, it is often not the primary goal.

At the same time, it is important to note that in all four types of language learning, cultural learning may also be an important goal. In foreign and majority language learning contexts, learners are typically learning about a culture different from their heritage culture; in contrast, all heritage and most endangered language learners have at least some relationship with or exposure to aspects of the culture(s) associated with the language they are learning.[7] This difference is important to understand, as it may affect the way in which learners relate to the cultural material that they are learning, particularly in the endangered language context, where the disconnect between learners and the target culture may be related to traumatic experiences such as colonization, genocide, or forced assimilation that may have impacted (and may continue to impact) learners and their families.

Learners' goals. Learner motivations in each of these contexts may also be quite different. As mentioned in the previous section, the goal of most foreign and majority language teaching programs is communicative proficiency,[8] and this goal generally aligns with learners' motivations: learners may hope to communicate with L1 speakers of the target language, understand their culture, and as a result experience an increase in abilities to travel (abroad or within the home country) and pursue employment and social opportunities. Similar motivations may obtain for learners of heritage languages, although there is often the additional goal of forming increased connections with one's heritage country or older members of the family and community for whom the target language is their dominant language, as well as building personal identity through connection with the heritage culture. In this context, it is still likely that acquisition of a heritage language will result in increased employment or social opportunities through working with members of the heritage community or traveling to the country where the language is spoken.

[7]Not all heritage language learners, however, have the heritage language or associated culture(s) as part of their home life. For example, in a case where a child spends some time in a place where one language is spoken, then moves to another place but seeks to (re)learn the language of their childhood, they may be seeking to learn as a "heritage" language a language that does not match the cultural heritage(s) practiced in their home(s). This was the case for some of my English students in Mexico, for example, who were born in Mexico but spent some time in the US as children, learned some English (but not, for example, academic writing), and later in life studied English as a heritage language after returning to Mexico.

[8]Certainly there are some foreign language programs whose goals are not communicative proficiency with L1 speakers. For instance, courses in languages like Latin, Old Irish, or Hittite do not have a goal of students being able to communicate with L1 speakers of those languages (as there are none). These courses may have more in common with language revitalization courses than other foreign languages courses do. At the same time, these courses may still fall more on the communicative side of things rather than the community-building side of things discussed for endangered language learning, as the goal of many such courses is reading proficiency in the target language. Reading proficiency constitutes a type of communicative proficiency, albeit a passive one.

With endangered language learning, on the other hand, learners may be more motivated to build a sense of community and belonging with other language users and learners, and they may be less motivated by communicative goals than in other language learning situations. Unlike foreign and majority language learners, who may need to use the language to communicate with others, many speakers of endangered languages also speak one or more dominant languages through which they can communicate with learners (though perhaps losing some subtleties through translation into the dominant language). Another difference is that endangered language learners may have a goal of using the language as a political act which may be seen as part of an anti-colonial movement towards self-determination (Leonard, 2012).[9]

Long term relationship between the learner and the target language. Learners of foreign and majority languages may continue to use the target language as a means of communication and connection with members of those speaker communities. Foreign language learners may communicate with speakers of the language (such as immigrants) in their home country, travel abroad, or enjoy popular media in the target language. In some cases, learners of majority languages may choose to use their new skills in the workplace and other multicultural public spaces in their country of residence. In other cases, majority language learners do not choose to learn the target language, but rather are forced to learn it as the result of assimilationist policies. For example, Native Americans were forced to learn English in boarding schools as part of the colonial project of assimilation; these policies continue in the form of English-based public education to this day.

Learners of heritage languages may also travel or move to a country where their target language is widely spoken, or they may choose to use the language with relatives and other members of the expatriate community where they live. Furthermore, they may consume popular media in the target language as another way to connect with the culture. At the same time, the choice to continue to use a language that represents a minority in the country of residence can also be considered a political act, highlighting the user's decision to maintain that connection to the heritage language and culture.

Learners of endangered languages are often treated as de facto language activists (whether or not they self-identify as activists), as their decision to speak a minoritized language can always be viewed as a political act.[10] Unlike other types of learners, endangered language learners also often must take on the additional burden of being one of a limited number of

[9]Kramsch (2019) questions the communicative motivations of foreign language learners in the modern age as the world becomes increasingly populated by (native and non-native) English-speakers, and communication between speakers of different languages is enabled through digital translation. She suggests that foreign language learning may now be related to acquisition of symbolic power, as bilingual and multilingual speakers can gain prestige and build identities as 'multilinguals.' While this may in some ways be similar to acquisition of an endangered language for symbolic rather than communicative purposes, the associated symbolic powers that come with abilities in a foreign versus endangered language strike me as quite distinct, though I think this is certainly a question open for further investigation.

[10]Kramsch (2019) suggests that all language use is a political act, and while I agree, it also appears that endangered language use is currently seen as a more out-of-the-ordinary or 'marked' language use decision, and as such the political nature of the act is more foregrounded than other types of language use.

knowers of a language, and thus the responsibility of passing on the language may fall to them whether or not they wish to take on such a role. Many are eager to do so, as demonstrated by the fact that many learners become language teachers (whether in a school setting or as parents who pass on the language to their children). Even if learners do not acquire fluency in the language, participation in endangered language learning can help learners become more engaged with their community (McIvor, Jacobs, & Jenni, 2018).

Influence of learning the language on the language itself. Hinton (2011) also points out that learners of endangered languages have the potential to dramatically shape the way the language as a whole is spoken in a way that learners of foreign, majority, and heritage languages do not (p. 311). If there are many L2 learners of endangered languages, their abilities in the target language may be affected by their L1; with a large enough proportion of L2 speakers, the language itself may change. This is particularly true in cases where learners are acquiring a language with no current L1 speakers (i.e. they are learning from documentation), as learners must rely on interpretation of documentation to reconstruct what the language was like, and may (often unintentionally) make changes in the process. Furthermore, learners bringing their languages into the present may desire to incorporate new words for referring to objects and concepts that didn't previously exist, such as new technologies, or may extend the language into new contexts (such as public schools).

Teachers. An issue that has been addressed in the literature on language revitalization is the fact that in some cases teachers of endangered languages are themselves learners of the language they are teaching (Hinton, 2003; Jansen, Underriner, & Jacob, 2013). In communities with no current speakers, teachers must be trained in the language, or learners must be their own teachers. Even if teachers gain fluency as second language speakers of the language, their abilities will differ from learners who grow up as L1 speakers of the target language. This type of situation, where learners have little or no access to L1 speakers (or the speech of L1 speakers in the form of popular media, literature, etc.), rarely arise in other language teaching contexts.

Even in cases where there are speakers of the endangered language, these speakers may be elderly and unable to participate fully in language teaching. Many have not received training in language pedagogy, though it is worth noting that while such training may be helpful, it is not necessarily required, as evidenced by the success of programs utilizing realistic, contextualized, conversational learning such as Master-Apprentice (Hinton, Vera, & Steele, 2002; McIvor et al., 2018) and language nests (J. King, 2001) (though see Wong Fillmore and Snow 2000 for arguments in favor of teachers being trained in linguistics).

Finally, it is important to consider the types of sacrifices expected of language teachers in endangered language contexts. For many individuals who teach their languages (whether formally or informally), they must give up other more lucrative economic opportunities in order to participate (McIvor et al., 2018), although some programs, such as the Master-Apprentice Program (McIvor et al., 2018) and Kanyen'kéha language immersion (Green & Maracle, 2018) provide some payment to offset this sacrifice. Furthermore, interacting with the language may bring up past trauma and loss (which will be further explored in the discussion of historical and emotional factors below).

Students. Some characteristics of students in endangered language learning may also differ from students in other language learning contexts. While learners of foreign languages are often privileged members of the group of dominant-language speakers within a country who are learning a language voluntarily, majority, heritage, and endangered language learners are often members of minoritized groups who face discrimination. Majority and heritage language learners may be immigrants or refugees who have been forced out of their countries of origin. Increasingly, learners of Indigenous languages (particularly languages of Latin America) are Indigenous immigrants and refugees to the US and Canada (Pérez Báez, 2014). Furthermore, by learning a heritage or endangered language, learners may unfortunately become subject to further discrimination.[11] A student's participation in endangered language learning may position them as a de facto language activist (whether or not they self-identify this way), and brings with it associated burdens. At the same time, heritage and endangered language learners may have a level of relative privilege within their communities that allows them time, resources, and access to language learning.

There is also a potential emotional burden to students of being one of a few number of speakers or knowers of their language. While other types of learners might experience burdens as a result of language learning, the nature of the burdens can be quite different. For example, foreign, majority, and heritage learners may be called on to translate for others,[12] while many endangered language learners will not face this situation if speakers of the language are bilingual or if there are no first language speakers. Instead, endangered language learners may shoulder the burden of carrying unique knowledge that they are expected (or feel obligated) to pass on to other community members. Beth Piatote (Ni:mi:pu/Nez Perce), a scholar and author who has experienced the process of learning an endangered language herself, explores some of these emotions in her story "Falling Crows" (Piatote, 2019), in a scene where the character Silas, a Ni:mi:pu man, is delivered a set of original recordings of his language:

> "For a moment Silas feels a flash of pain and perhaps fear; this is the anxiety the blooms from inheriting a dying language. *No, not dying*, he thinks, *only endangered*. To be in danger is to be in a state of perpetual vigilance; it is fight-or-flight every day. Silas knows this. He feels the magnitude of treasure in his arms, and the intense pressure of keeping it safe. *Fight or flight.* A wave of failure washes over him. He straightens his back." (p. 89)

In this excerpt, Silas experiences a range of emotions—pain, fear, anxiety—related to his role as an inheritor and guardian of the language, that one does not normally associate with language learning, but which Silas must take on due to his relationships with language and community.

[11] This concern came up in many interviews with parents in Teotitlán.

[12] This can cause an emotional burden, particularly for child learners of majority languages who are then called on to translate for their parents, shifting the parent-child power dynamic in ways that can be uncomfortable for both parties.

Historical and emotional factors. It is important in the contexts of heritage and endangered language learning to consider the role of historical and emotional factors that may come to the forefront of learners' and teachers' minds during the process of language learning (Dauenhauer & Dauenhauer, 1998). In the case of endangered language learning, as was shown in section 3.1.2, the causes of language loss are generally traumatic—whether genocidal, economic, or ideological. Renewed attention to the trauma may cause difficulties for both teachers and learners. Clara Camille, a Mentor in the Mentor-Apprentice Program (MAP) for the Secwepemctsín language, describes her own such challenges as a language Mentor (McIvor et al., 2018):

> "MAP awakened a lot of stuff that I had stored in my back memories [...] It really helped me ... pull all of those memories out, and now I'll be sitting with someone, and something will come up, and [...] pretty soon we get to talking about things like that, so it has helped me a lot in uncovering all the old things that had been suppressed over the years." (p. 14)

Similar themes emerged throughout interviews with Mentor-Apprentice Participants (both mentors and apprentices). In the report on the program outcomes, the authors write (McIvor et al., 2018):

> "Feelings of grief over the loss of the language were expressed especially by Elder mentors. The trauma caused by colonial policies and practices continues to affect individuals, families, and communities in complex ways, and participants talked about feelings of shame, embarrassment, and a sense of displacement, indicating that today's language learners and teachers still wrestle with grief." (p. 21)

While it is possible that similar issues may emerge in heritage language teaching contexts, where learners may have experienced trauma as they and their families left their countries of origin, and may feel a sense of displacement as a minoritized population in a new place, it is not necessarily the case that heritage language learners experienced trauma if they were able to immigrate to a new place voluntarily. Historical factors, however, often play a large role in language revitalization contexts.

In addition, it is useful for those who engage in language revitalization to understand the relationships between Indigenous genocide and forced assimilation; the rise of academic fields like linguistics and anthropology whose work was to 'salvage' what was left of 'disappearing' languages and cultures (Garrett et al., 2019); and the impacts of using documentary materials collected by academics from communities experiencing historical trauma. Because these historical contexts can impact learner's' reactions to language revitalization—as exemplified by the feelings of grief and trauma reported by McIvor et al. (2018)—understanding them may be helpful in preparing for and addressing some of these difficult reactions.

Resources available. As Hinton (2011) and Hornberger and De Korne (2018) also note, the number of resources for language teaching that are available for teaching endangered

languages pale in comparison to other types of language teaching. Even 'less commonly taught languages', which (according to the National Council of Less Commonly Taught Languages) in the United States includes languages like Arabic, Chinese, and Russian, are usually majority languages of nations who use them in their domestic education. As a result, there exist curricula and teaching materials for these languages.

For endangered languages, on the other hand, a language revitalization program might represent the first time the language has been taught in a way different from intergenerational language transmission in the home; thus, there may be few resources available for language teaching. In some cases, materials prepared for related languages can be adapted to a new program, but even this process entails a large amount of work. Furthermore, in some cases, not only does a curriculum need to be established and materials generated, but the language needs first to be recovered from documentation. This process of understanding how to use the language from documentation will likely require the assistance of experts in the field of linguistics before language learning materials can be designed by teachers, learners, and other educators.

3.2 Key factors affecting language revitalization program design and implementation

This section outlines some key factors that I will be considering as I elaborate on the situation in Teotitlán del Valle, and which I argue are relevant factors for consideration in designing, implementing, and evaluating any language revitalization initiative. Factors 1-8 represent background factors; these are factors that are present with or without the implementation of a language revitalization initiative. They shape the applicability of different types of language revitalization initiatives, as well as the outcomes of implementing the initiative. Factor 9—goals—is both a background factor and an emergent factor. It is a background factor as stakeholders and groups involved in language revitalization may have their own goals before any initiative is selected; these groups will hopefully shape the type of initiative carried out. Goals are also emergent, as the background factors may shape the goals that an initiative seeks to address. The goals of an initiative may or may not be the same as the goals of stakeholders. In many cases, for example, the goals of an initiative are a subset of stakeholder goals. Finally, points 10-13 are emergent factors that will ideally be informed by the background factors. They are the target population served by a language revitalization initiative, the timeframe of program implementation, the methodology of the intervention, and the outcomes.

In the sections below, I clarify what I mean by each factor, and I justify the importance of considering each of the background factors as one is choosing a language revitalization initiative. I also present some expected parameters of variation for each factor.

Population factors. One key factor in determining which type of intervention best suits the goals of a community is the target population and its relationship to the population at

large. Therefore, before determining the target population, it is important to understand the population overall. How many speakers of the language are there? How old are they? How willing are they to participate as teachers, mentors, or masters? If there are no current speakers (or no current speakers interested in participating), who are the people who will learn the language in order to teach it?

Another important consideration (which also arises in evaluating the endangerment status of languages, as in the language endangerment evaluation schemas proposed in *Language Vitality and Endangerment* 2003 and Grenoble 2011) is how the population of speakers and learners compares to the population at large. What proportion of the heritage community are speakers of the language? What proportion of the regional and national population does the heritage community comprise? Is the population located in one place geographically, or is the population spread out, possibly even across international borders? The answers to these questions will affect the types of programs that are best suited to the population in question.

Regional factors. In addition to considering how the target population and the heritage population fit into national and international populations as a whole, it can be useful to consider regional trends that might affect language revitalization. Understanding how language policies, for example, have affected other language revitalization programs in the area may help language revitalization practitioners make informed decisions about the best ways forward for their projects.

Furthermore, differences in the nature of colonial practices carried out in different regions can profoundly impact language use and ideologies. Differences between the settler-colonial practices common in the Americas and Australia versus non-settler practices in places like India and Africa have resulted in different linguistic landscapes. In the Americas, national languages like English, Spanish, Portuguese, and French are being spoken at the expense of Indigenous languages. In India and Africa, it is often regional languages that threaten smaller local languages (Grenoble 2011; Mohanty 2010). By looking at other cases of language endangerment and revitalization in the region, one might be able to get a sense of the important considerations that are shared across the region.

Linguistic factors. It is also important to consider aspects of the language itself, its documentation, and its relationship to other languages. These factors might affect how individuals working with one language are able to collaborate with individuals working on other languages, and will also have consequences for the teaching and learning strategies that are most appropriate for a language given its structural properties.

Some specific linguistic factors to consider include the target language's relationship to other languages in its linguistic family. If, for example, there are closely related language varieties that have resources for language teaching, those resources could possibly be adapted to the target language. It is useful to consider the other languages that are present in learners' surroundings as well, including the language(s) that they speak as an L1 and other commonly heard or commonly used languages in the learners' environment. Similarities and differences between the sounds and grammar of the target language and of the L1 of the learners can be helpful to take into account. On the one hand, if the target language is similar to learners'

L1, this could ease acquisition of the target language; however, it may also lead to extension of features from the L1 into the target language. On the other hand, if the two languages are structurally very different, this could be a barrier to learning, particularly for older learners.

If the language is not currently spoken, another key linguistic consideration is to understand the state of the existing documentation of the language, including how much documentation exists, in what format (written, audio, analog, digital), and prepared for what audience. In many cases, language documentation has been prepared by a linguist for an audience of linguists; this will likely make interpretation of this documentation by those not familiar with linguistics very difficult. As a result, it may be necessary to engage with a consultant who has knowledge of linguistics and language documentation and who can help interpret documentary materials. It may also lead some of the language revitalization participants (if they are not already linguists) to study linguistics so that they can better interpret the documentation themselves.

Another possibility to examine, particularly in the case of sleeping languages with little documentation, is whether examination of the documentation of closely related varieties or work with speakers of those varieties would be beneficial. In some cases, examining systematic alternations between sounds has allowed for researchers to hypothesize what the cognate word would be in the target language. Applying general grammatical rules for the language to known forms can assist in deriving predicted unknown forms (Spence, 2018).

Political institutional factors. Political and institutional factors often greatly influence the possibilities and outcomes of language revitalization through laws and programming. In many cases, speakers of endangered languages may be politically suppressed, and this may limit their abilities to safely conduct language revitalization activities (Roche & Bum, 2018). In other cases, endangered languages have overt support from the government or other institutions. K. King and Arnal (2016), for example, note that "with the exception of Uruguay, Cuba, and the Dominican Republic, all Latin American and Caribbean governments now formally recognize within their constitutions the multiethnic, pluricultural, and multilingual nature of their countries" (p. 164). Of course, in many cases this legal status does not translate to tangible benefits for speakers and learners of the languages in question (K. King & Arnal, 2016). Besides government support, language revitalization may also be supported by nongovernmental institutions (Henderson et al., 2014). I have chosen to include political and institutional factors under the same heading given that in some cases governments and non-governmental institutions can fulfill the same functions (Henderson et al., 2014), and both can be affected by 'politics' in the sense that multiple stakeholders must compete to have their needs and desires met.

Social and ideological factors. As mentioned in section 3.1.2, language ideologies can be a decisive factor in the maintenance, loss, or growth of language use. When individuals attach negative feelings to languages, they may decide not to use the language, or not to teach it to their children, as a way to avoid the negativity they associate with those languages. Other ideologies, such as the western language ideologies also presented in section 3.1.2, may lead people to raise their children monolingually in the dominant language because of beliefs that bilingualism will negatively affect their children's language abilities in one or

more languages (Dorian, 1998), despite empirical evidence to the contrary (Trautner, 2019).

Of course, these ideologies are entwined with social factors. Languages can easily acquire high or low prestige based on the prestige of the social group that predominantly speaks that language (Joseph, 1987, p. 31 cited in Dorian, 1998, p. 7). Social mobility can also lead to language shift, as individuals hoping to associate with a new social group may adopt that group's language. On the other hand, groups hoping to define themselves in contrast to other groups may maintain their language, using it as a marker of social identity.

While social and ideological factors may sometimes pattern together with other factors (particularly economic and political/institutional factors), they are not always aligned. For example, many communities pursue language revitalization without political or institutional support, and many also recognize that language work is not likely to lead to economic benefits in their case, but pursue it nonetheless. I include 'social' and 'ideological' in a category together, as it seems that individual-level social factors such as who people talk to, who has social power, and what social groups people want to belong to, often influence individuals' language ideologies such that they are aligned with the ideologies of others in their social group.

Economic factors. In addition to economic factors being a driver of language endangerment (section 3.1.2), as individuals shift to languages that will afford them greater economic possibilities, funding is another important economic factor in language revitalization. What funding is available for any given language or program? Will one approach over another have a greater chance of receiving funding? Although it may not represent the ideal, funding can be a driver that motivates the decision to take one approach to language revitalization over another: if funds are available for projects of a certain type, such projects may be undertaken whether or not they are the best fit for the situation.[13]

Other economic factors are also crucial. What is the economic status of potential participants (both learners and teachers)? Will they be able to participate, or will they need to focus their energies on more lucrative endeavors? Can the language revitalization initiative address these needs in any way (such as providing stipends for participation, as Green and Maracle 2018 and McIvor et al. 2018 describe)?

Finally, looking back to the economics driving language endangerment in the first place, it could be worth considering how a language revitalization program can create new opportunities for language use that also generate economic opportunities, such as new full-time positions in schools, or demands for doctors who speak Indigenous languages.[14]

Temporal factors. Another important consideration is the timescale of the language

[13]This may be anecdotally true at least in Teotitlán, where the community language committee carried out a project to create street signs in Zapotec, as this is an initiative that is funded by the state organization CIESAS. This was a valuable project that was carried out successfully and enjoyed by community members: Teotitlán now has street signs prominently displaying Zapotec. At the same time, I am not sure that this project would have been given first priority if it hadn't been presented as something that would be automatically given funding by CIESAS.

[14]See Henderson et al. 2014 and McIvor et al. 2018 for discussions of economic benefits of language revitalization.

endangerment situation. Some of these questions are addressed in scales of language endangerment like *Language Vitality and Endangerment* (2003), which looks at the distribution of the speaker population across generations. For example, has the community experienced a dramatic decrease in speaker population, or is the speaker population declining slowly? For how much longer are there expected to be L1 speakers, based on current speaker populations and trends? The time depth and intensity of language contact between the endangered language and its surrounding languages could also be relevant. For example, the kinds of language shift being experienced in Oaxaca today, after nearly 500 years of contact with Spanish-speakers, might be very different from the language shift experienced in Amazonian communities with only 20 or 30 years of contact with speakers of colonial languages. Understanding the answers to these types of might also help determine the scope of intervention needed to achieve the target result.

Resources. Before determining what program(s) are likely to be successful within a given community, it is useful to take stock of the resources available. These include things like sources of funding and institutions that are willing and able to support the project, as well as physical resources, such as documentation, curricula, texts, and teaching materials that have already been created (though for many languages, there are few or no materials already in existence; see Hornberger and De Korne 2018 for discussion). In addition to materials created for the target language, it is also useful to find materials created for closely related languages, or languages for which similar language revitalization initiatives have been carried out, as many of these materials may be usefully adapted to the target language (Spence, 2018). Another key resource to consider is human resources: who are the people who will be able to contribute to the project as managers, teachers, students, mentors, etc., and how much will they be able to contribute? Determining the extent of resources in existence, as well as the resources that will need to be generated, is crucial in setting realistic program goals. At the same time, I find it beneficial to actively work against deficit framings in this sphere. Significant work can be done with few resources, and postponing language revitalization work because of a perceived lack of resources can be detrimental.[15]

Goals. Of course, stakeholder goals will be central to decisions regarding program design and implementation. Before beginning any language revitalization project, it is crucial for stakeholders to participate in a process of "ideological clarification" (Dauenhauer & Dauenhauer, 1998). Different stakeholders may have different goals when it comes to language revitalization. For example, while some groups may set a goal of raising 100 children to be L1 speakers of the target language, other groups may set the goal of learning 10 words in the language that can be used to index their identity as members of the heritage community. These different goals are likely to be effectively supported by different initatives.

Ideally, goals will be collaboratively set by all stakeholders involved in the revitalization

[15]For example, I hosted the first iterations of the Zapotec language workshops with no source of funding beyond my own personal means. While I spent a marginal amount of money out-of-pocket, it was mostly possible to host these events at no cost. By pushing forward with the resources available, rather than waiting to raise additional resources, it was possible to engage with children at an earlier point in time and have a positive impact (as will be discussed in chapter 6).

effort, though in practice this is not always the case.[16] Furthermore, given that language revitalization is closely tied to issues of identity, it can be difficult for people to express their goals directly. Dauenhauer and Dauenhauer (1998) discuss this difficulty in the context of Southeast Alaska. When people are asked whether they want to preserve a particular language or culture, they often give a resounding answer of "yes!" because this is the "politically and emotionally correct" answer (p. 63). At the same time, there may be "underlying and lingering fears, anxieties, and insecurities" that would lead people to a more realistic answer of "no" (p. 63).

Even in a case where stakeholders can express and agree on a set of goals for language revitalization, these goals may or may not align with the goals of the language revitalization initiative. In many cases, program goals (or at least immediate program goals) are a subset of stakeholder goals (with other stakeholder goals as possible long-term goals of language revitalization). For instance, in Teotitlán, many community members express a goal of having all children in Teotitlán speak Zapotec. While this is a long-term goal of the Zapotec language workshop initiative, the short-term goals (described as "outputs" in section 4.6) of the project may be more modest: use Zapotec language games each day during a language revitalization workshop. Furthermore, it is possible that other factors may outweigh stakeholder goals in developing program goals. For example, as mentioned above regarding economic factors, if resources (such as funding) are available for pursuing a particular type of project, that project may be pursued even if it may not address the main goals of the group in the most direct or efficient way.[17]

Target population. Language activists will want to determine who their initiative will target. For example, will it target children or adults? While it is possible to implement programs that target a wide range of ages, younger learners generally acquire language through different mechanisms than older learners. Thus, the methodologies for teaching and learning that are best suited for a context may vary depending on the age of learners.

How will participants be recruited or learn about the program? Will they participate out of their own motivation, or will they be required to attend as part of compulsory education? Will participants be remunerated, and how will this remuneration either allow committed participants to engage with the program without losing necessary income or motivate non-committed participants to seek the extra wages offered?

Furthermore, what is the scale of the intervention? How many people are expected to participate, how many is the program capable of accommodating, and what will be done if capacity is not reached or is exceeded?

Timeframe of implementation. What is the timeframe of the intervention? How long will the intervention last? If there is a funding source, does it expire? Is it intended

[16] I will elaborate in section 3.3 who the common stakeholders in language revitalization are and what their goals and contributions might be. As discussed in section 1.2, while all stakeholders should be invited to participate, it is not necessary for *all* stakeholders to participate, but only those who wish to participate.

[17] Again, I encourage the reader to have an abundance mindset in this regard: even if an initiatives does not address the goals in the most direct or efficient way, it may contribute to the goal and have a positive benefit overall.

to be an ongoing project, or is it a one-time occurrence? If relevant, how will the design of the program make it sustainable in the long run? How frequently will it happen and for what duration of time? For example, even if two interventions involve classroom instruction with the same target audience for twenty hours, they will require different approaches if they will be implemented as a one hour class every other week for forty weeks versus five four-hour classes over the course of a single week. The answers to these questions will help those involved set reasonable goals that fit within the scope of the intervention.

Method. What methodology or methodologies will be used in the initiative? In section 3.5 below, I lay out a few possibilities, such as communication-based instruction, task-based learning, student generation of learning materials, and community-building activities. These are just a subset of the methodologies available, but they represent some of the more common approaches, and are approaches that I argue are particularly beneficial in language revitalization contexts. Which method is appropriate depends very heavily on the background factors for a given situation.

Outcomes. Given the background factors, once an initiative has been selected, developed, and carried out, what are the observable outcomes? Are there ways to evaluate the success of an initiative and gather data that will help in improving the initiative for the future? In section 3.4, I present some ways in which outcomes can be measured and assessed as part of an overall evaluation of an initiative.

3.3 Stakeholders in language revitalization programs

In this section I would like to elaborate on some of the possible stakeholders in language revitalization that have been discussed in the literature. Although I present potential categories of stakeholders in the following subsections, I prefer to consider these more as 'roles' than categories of individuals, as individuals often take on a variety of roles, either simultaneously or over time. For example, the first two roles I present below, 'community members' and 'linguists,' are frequently cited as the two main—and distinct—groups of stakeholders in language revitalization. Rice (2009), for example, writes about ending the "two solitudes that divide linguists and language activists" by having "linguists and Indigenous communities...work together to help revitalize Indigenous languages" (p. 37). By framing the issue such that communities exist on one hand and linguists on the other, she implies that these are two distinct groups. I argue (following Leonard and Haynes 2010 and Leonard 2017) that instead of considering linguists and Indigenous community members as two distinct groups, it is more useful to think of them as two *roles*. In some cases, one individual only takes on one role or the other, but in other cases, these two roles are held by a single individual.

I will also discuss the roles of educators on one hand, and institutions (government agencies, NGOs, and funders) on the other. Again, there is room for overlap between these roles. Individuals with their own personal motivations as community members, for example, often also hold positions in institutions such as public schools or government, and they may

be motivated to make different choices depending upon which role they are playing at a given moment.

In each of the subsections that follow, I discuss my understanding of how each role is or can be defined and why individuals occupying these roles might be important stakeholders in language revitalization.

3.3.1 Community members

Language revitalization nearly always involves identification of a 'community' whose language is endangered. While the notion of 'the community' is often taken for granted by linguists, several scholars have problematized this notion.

Beier (2018) notes that there are a multitude of ways to define community, and "[t]he membership criteria shift around—usually subtly," and can be based on place, interaction with other members of the group, shared characteristics, or self-identifying as being part of the community. As a result, it can be difficult to determine which individuals are part of 'the community' in question at any given moment.

Let us consider several possible ways of defining a 'community.' It could be defined as a group with the shared characteristic of speaking a given language, but such a distinction is problematic in the language revitalization context, as the group of individuals involved or targeted often contains people who are not speakers of the language. Hinton et al. (2018) provides a definition of 'community' or 'speech community': "We use those terms loosely to mean one or more people who identify with a particular language, through heritage" (p. xxvii). But even using this kind self-identification as a criterion might be problematic, as some projects of revalorization might target individuals who are ashamed of associating with the language in question, and thus would resist self-identifying as members of the speaker community. Moreover, for many Indigenous communities, speech communities can include not only human parties, but also nonhuman parties (such as plants, animals, water, or other environmental elements as active participants (Engman & Hermes, 2021).

Making a distinction based on geography can also be problematic, as colonization, globalization, and urbanization have resulted in many individuals living outside of what they may consider their traditional homelands. Traumatic events such as the forced takeover of traditional lands, loss of economic power, and fear of violence have required groups to move for survival (Hinton et al., 2018). For example, Pérez Báez (2014) discusses the case of the San Lucas Quiaviní 'community': half of the community members now live in California, while half live in Oaxaca, Mexico, making identification by geography difficult. Moreover, not all individuals who consider themselves to be members of the community are Zapotec speakers, making identification by language problematic as well.

Hinton et al. (2018) also notes that there may be 'communities' of language users that span a number of different official 'communities,' such as different tribes recognized by the US government who have associations with the same language. The reverse is also possible: a group with a single official designation as a tribe or other unit may have several languages.

Furthermore, even if a community can be successfully defined in a given situation, community goals and opinions are often treated in the language revitalization literature as monolithic, with 'the community' choosing to undertake a particular initiative because it best serves 'the community's goals'. In reality, communities are rarely so united, and in many cases there are several groups within a community that might be served by different language revitalization initiatives.

At the same time, it is possible to find areas of meaningful overlap in characteristics among a set of individuals falling under one or more of the above definitions of 'community,' which makes the use of the term remain useful. Furthermore, under the ethical frameworks promoted in linguistics, collaboration with 'the community' is often called for (Hinton et al., 2018; Leonard, 2017; Rice, 2009) or explicitly required in order to receive funding or other privileges.[18]

3.3.2 Linguists (from within and outside of the community)

In addition to casting 'the community' as a monolithic set of individuals rather than acknowledging the diversity of individuals that might make up a community, many authors assume that 'linguists' form a similarly monolithic group that can be considered as a unit, and which falls in contrast to 'community members.' As Leonard (2017) notes, the idea of these groups is problematic:

> "First, it may fail to account for the diversity within both groups, particularly as it applies to the reality that ideas about language work are contested in both. Second, it imposes a binary categorisation that erases the many examples of people like me who fit into both categories...I am a linguist and a member of a Native American community who entered academia to do language work." (p. 17)

Thus, treating language activists or members of the speaker/learner community as one set of stakeholders and linguists as another hides the fact that individuals can belong to both groups or occupy both roles.

Furthermore, treating 'linguists' as a group can be problematic, particularly when such a distinction is being used to determine the goals of stakeholders and their most appropriate roles. Individual linguists can have their own views with respect to language revitalization, as evidenced by the articles published both highlighting (Hale et al. 1992, Dorian 1993) and downplaying (Ladefoged, 1992) the importance of linguists' involvement in language documentation and revitalization. Assuming that all linguists hold the same views about language endangerment and revitalization, and that they have the same research interests, can lead to failures in reaching ideological clarification.

In addition, while linguists may generally share some of the same general training (such as a basic understanding of the IPA, phonetics, phonology, and syntax), not all linguists

[18]The Endangered Languages Fund, for example, requires a letter of support from 'the community' or a speaker of the language (*Language Legacies*, n.d.).

are best suited to carry out the same tasks in language revitalization contexts. As Daryl Baldwin notes, linguistic research and language revitalization differ in critical ways: "Language revitalization is about people, not language—a whole different skill set" (Gerdts, 2017, p. 608). Thus, it is not only the linguistic skills, but rather a much broader range of skills—including interpersonal skills—that are relevant to an individuals' involvement in language revitalization.

3.3.3 Educators

Another important stakeholder role is that of educators. This role may, of course, be held alongside the previously discussed roles, although there are also cases where there is no overlap. For instance, language revitalization programs involving the school may require the participation of teachers and administrators who are neither members of the language community nor linguists, but whose services can be helpful in planning the logistics of the initiative. Furthermore, teachers (especially language teachers) can be helpful in designing teaching materials and curricula, as there are notable similarities between endangered language teaching and other types of language teaching despite some differences (discussed in detail in section 3.1.4).

3.3.4 Government agencies, NGOs, and funders

Finally, it is crucial to consider the role of government agencies, NGOs, and other funders who may be involved with a project. These groups may have goals that are only partially aligned with the goals of other stakeholders. For example, a school district may be willing to implement bilingual education, but with the goal of ultimately improving the test scores of students on majority language tests (such as English or Spanish language tests), based on previous reports that bilingual education has resulted in higher test scores in other schools. Thus, while the agency may help with the implementation of the language revitalization initiative, it is important to remember that this commitment may depend on the realization of some other goal.

Furthermore, many funding agencies require some type of evaluation, assessment, or proof of progress once the funding has been provided. The reports or evaluations that they request may or may not align with the goals and methodologies of the program. This is a hurdle that should be considered when deciding what types of funding to use. The issues of how to evaluate progress in language revitalization will be addressed more fully in the next section.

3.4 Assessing program outcomes

Although the literature on assessment of language revitalization initiatives is growing, there is still much work to be done in this area. In this section, I first present an overview of discussions in the literature around the applicability of the types of assessments that have

been used in western-style classroom education to the learning of endangered languages. Next, I present some approaches that have been taken to assess three aspects of language revitalization initiatives: in 3.4.2 I present ways of collecting data on language *use* through reported survey data; in 3.4.3 I address methods for assessing language *proficiency* directly; and in 3.4.4 I address methods of assessing *broader impacts* of language revitalization beyond language itself.

First, I would like to briefly discuss the difference between *assessment* and *evaluation*. As will be discussed in section 6.1.1, while *evaluation* and *assessment* are distinct, they are often defined differently by different authors and are sometimes used interchangeably. In this section, I focus on *assessment*, which I define as being concerned with understanding what a learner knows, rather than *evaluation*, which I define as being concerned with understanding the processes through which a learner might come to acquire or not acquire knowledge. However, I will use these two terms interchangeably in this section, given that the authors I am citing use them interchangeably as well.

3.4.1 Issues in adapting current assessment practices to endangered language teaching

There are a number of issues that arise when one thinks about directly adopting the types of assessment strategies that are used, for example, to assess students' English language skills in US public schools, to assess endangered language skills. For one, the style of assessment used for English language evaluation is highly tailored to the specific standards of 'academic English.' Wong Fillmore and Snow (2000), citing Cummins (1981, 1984), point out that academic English is "relatively decontextualized" (p. 20) and targets a specific set of skills, often related to written language use in formal contexts (p. 21). In language revitalization, on the other hand, the goal may specifically include acquiring styles and genres that are unique to the language and are used in specific contexts. With this goal of acquiring context-dependent language use, the typical decontextual style of language assessment (such as through standardized exams) used for English language evaluation will not provide sufficient data to assess whether or not a programs' goal of teaching language use in context is being met.

It is also worth considering the costs and benefits of conducting an assessment of language skills in terms of *learner investment* (defined in section 1.3) as a result of the assessment. While it is useful to collect data on how student performance has or has not changed as a result of some initiative, it is also important to consider what effects negative results might have on individual students. This is not to say that I worry about the effects of negative assessment results on a program: if a program is not serving community goals, it is wise to consider other options. What is concerning, however, is how an assessment may have a negative impact at the level of the individual. If a program is generally successful, but a particular student is assessed (or perceives to be assessed) as having some type of deficit (such as being slower than other students in learning the material), how will that affect the

student's investment in continuing the program? I believe that it is important to consider how any assessment method will affect individual stakeholders in addition to the program overall.[19]

In assessing student learning in the Zapotec workshops in Teotitlán, for example, I could ask students in one-on-one interviews to name colors and numbers to test their acquisition of these words. I have chosen not to do so, however, as this type of testing situation can be stressful for students (especially if they struggle to perform well) and may decrease their investment as learners participating in this voluntary, extracurricular program. Moreover, such assessment is decontextualized; while learners may have acquired color or number terms, the ultimate goal of the program is to empower students to use those terms in conversations with Zapotec speakers in their daily lives. So, simply assessing acquisition of lexical items will not provide data on whether or not the goal of language use in context is being met. Moreover, if assessment reduces participants' interest and enthusiasm for learning the language, it then goes directly against one of the main goals of the program.

It is also important to recognize the wide range of possible goals in language revitalization, and to understand that in order to assess whether or not these wider goals are being reached, methodologies that assess goals that reach beyond language acquisition itself will be required. Some potential methods for doing so will be presented in 3.4.4, but in the following two subsections, I will first describe some common methods for assessing acquisition and use of language.

3.4.2 Language use reports

One way to assess student learning in language revitalization is to ask for reports of language use or language skills, either from self-reports or from parents or teachers who may be able to comment on learners' language use. However, there are many ways to frame questions about language use and language skills, and not all are equally reliable (Bedor et al., 2012). Let us first consider how we might probe children's language proficiency through reported language use or language skills. Bedor et al. (2012), for example, found that parents' and teachers' assessments of children's current language use are more reliable than their assessment of whether or not children meet certain developmental benchmarks. However, even considering only parent or teacher reports of language use among children, some ways of framing the language use question are more reliable than others. Bedor et al. (2012) analyzed several different reported metrics of language use and determined that, of the metrics they examined, a method used by Gutiérrez-Clellen and Kreiter (2003) was the most reliable. This method involved asking parents to report for each hour of the day, who their child is with, what language that person is using with the child, and what language the child is responding in. This method may be useful for language revitalization assessment and evaluation (and was used in this study; see section 2.2.2), as administration of such a survey on language use is relatively easy to carry out, in comparison to development of direct measures such as tests

[19]Similar concerns are expressed in Peter (2003) and will be discussed in greater detail in section 3.4.4.

probing acquisition of specific linguistic skills (which would not only have to be designed, but also designed for children at various levels of development).

Caregiver reports, thus seem to be a potentially reliable source of data on children's language use, but what about adults' language use? Bedor et al. (2012) report that adults are reliable at rating their own proficiency. Moreover, self-reports have already been used as assessment tools in language revitalization when the learners are adults, as in the Mentor-Apprentice Program assessments developed by McIvor and Jacobs (2016). The tool they developed includes a wheel with a number of skills for speaking and understanding at the beginner and intermediate levels. Apprentices are asked to periodically assess the frequency with which they can do a given activity. For example, students are asked to decide for the statement "I can talk about something that is happening now" whether this is something they cannot do yet, do rarely, sometimes, mostly, or always (figure 3.1).

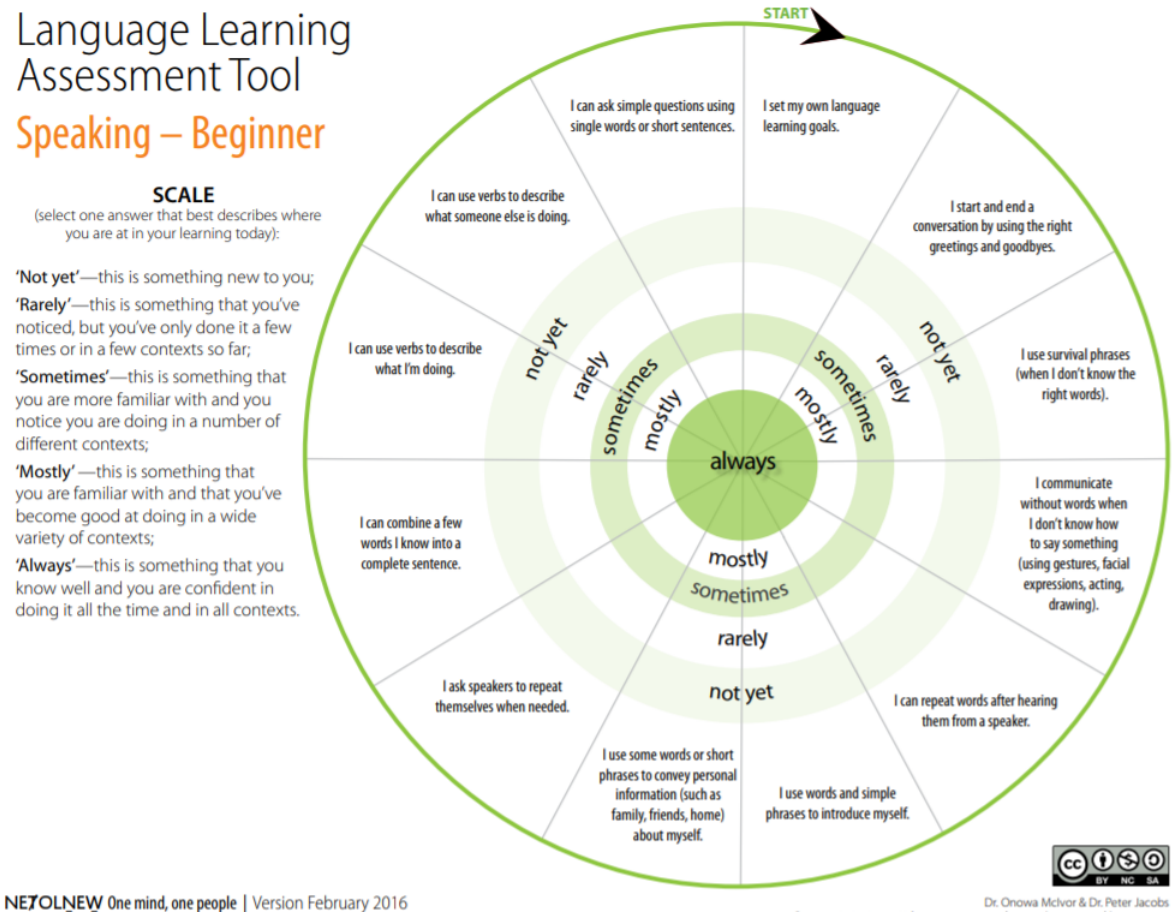

Figure 3.1: Self-assessment tool for apprentices in Mentor-Apprentice programs (McIvor & Jacobs, 2016).

Although some may think that direct measures of language proficiency are more 'objective' than reported data, Bedor et al. (2012) point out some potential complications. First of all, they present cases where L1 speakers of English failed to pass as 'fluent' speakers of the language on standard language assessments, suggesting that these measures are not accurately representing language knowledge. Moreover, as discussed above and in section 2.2.1, determining what linguistic forms should or could be considered 'correct' when assessing acquisition of a less-commonly-spoken language is a difficult undertaking, particularly for languages which are also underdocumented or do not have a commonly accepted standard form. Drawing lines between what falls within the scope of 'natural' language variation versus learner 'errors' requires making non-objective judgements about what the 'standardized' variety of the language will look and sound like.

At the same time, it is not a given that Bedor et al. (2012)'s finding on assessing proficiency for large languages like Spanish or English can be applied to endangered languages. Dauenhauer and Dauenhauer (1998) discuss, for example, inconsistencies they have observed in self-reports of language use in Southeast Alaska due to individuals' specific ideologies about the merits of speaking or an Indigenous language or distancing themselves from that language by reporting low abilities. Furthermore, people may be influenced to answer self-reports in one way or another depending on what they perceive to be the language ideologies of whoever will be reading the self-report. The complex interplay between people's individual language ideologies, the perceived ideologies of others, and the self-reports make interpretation of such data difficult in endangered language contexts.

3.4.3 Oral fluency interviews

If it is decided that it is necessary to evaluate language proficiency directly, a common means of assessment is oral fluency interviews.[20] These types of interviews have been used in programs like the adult Mohawk language immersion schools described by Green and Maracle (2018). In developing these standards, some people have turned to the support of the American Council on the Teaching of Foreign Languages (ACTFL), which has developed a set of Language Proficiency Guidelines that are meant to be applicable across a wide range of languages, and can be useful particularly in school settings where students are required to achieve a certain level of fluency in order to meet program language requirements (such as a requirement that students complete two years of a 'foreign langauge' or the equivalent).

The ACTFL Proficiency Guidelines outline expectations for speaking, writing, listening, and reading skills "in real-world situations in a spontaneous and non-rehearsed context" (*ACTFL Proficiency Guidelines*, 2012). They lay out a hierarchy of language proficiency levels, from 'novice low' to 'distinguished' with each higher level containing all of the skills of the levels below it. These levels can be represented as an inverted cone, such that an

[20]In this dissertation, I have defined 'fluency' as entailing that a speaker can express themselves in the target language in the contexts where they wish to be heard. However, others define fluency differently and may use their own definitions in assessing learners' fluency.

exponentially increasing amount skills is required to move up from one level to the next (as depicted in figure 3.2).

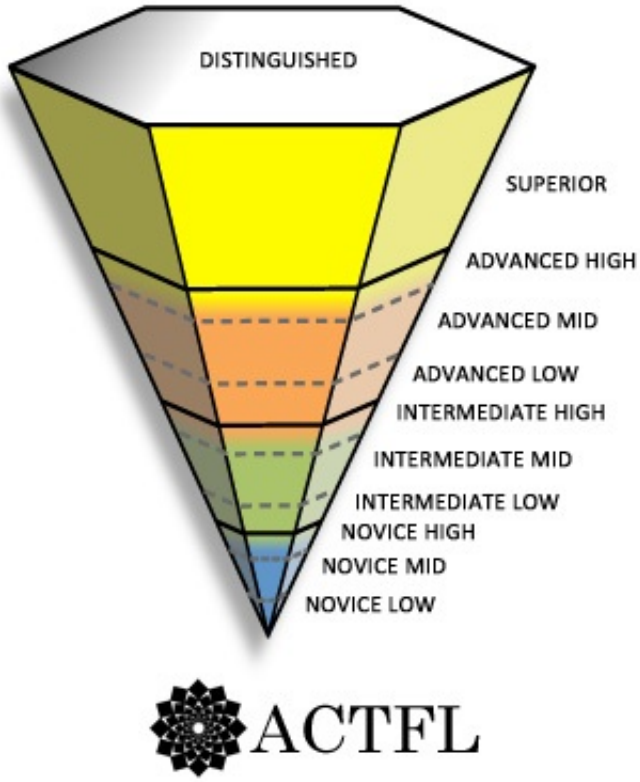

Figure 3.2: ACTFL graphic depicting levels of language proficiency (*ACTFL Proficiency Guidelines*, 2012)

While these guidelines are useful and not specific to a particular language or culture, they are nevertheless potentially problematic in some ways. For example, assessing reading and writing skills may not be relevant in a context where there is not a tradition of reading and writing in the language.

3.4.4 Culturally Responsive Evaluation

In contrast to the models presented above, other scholars have been developing methodologies to evaluate outcomes from the bottom up, where evaluation criteria emerge through discussion with stakeholders rather than being imposed as part of a preconceived assessment or evaluation scheme. In these models, one cannot prepare a rubric like those in figures 3.1 and 3.2 ahead of time; one must instead work collaboratively throughout the project to

determine criteria collaboratively. One such approach is Culturally Responsive Evaluation, as described by Peter (2003).

Peter (2003) highlights some of the barriers to formal evaluation of language revitalization programs. She notes that in some cases, practitioners are consumed with the operation of the program itself and don't have time to implement an evaluation. Furthermore, as I also mentioned above, the author notes that there may be concerns about the effects of evaluation results on the program itself. At the same time, she asserts that evaluation is crucial to understanding whether or not a program is meeting its goals. She illustrates how the approach of Culturally Responsive Evaluation addresses these concerns, and explores the use of such an evaluative model by the Cherokee Nation of Oklahoma, which takes ideas from the constructivist model of Lincoln and Guba (1989) and the empowerment model of Fetterman (2001).

One of the key features of Culturally Responsive Evaluation is that it does not assume that there is some underlying, value-free truth that can be revealed through evaluation (particularly through the use of quantitative measures). Instead, this approach focuses on stakeholder participation and empowerment. It is a constructivist method (Lincoln & Guba, 1989) which recognizes that findings are not inherent but constructed, and as a result it is necessary to establish the equality and inclusion of all stakeholders as contributors in order to ensure that the constructed findings are valid from multiple viewpoints. Furthermore, the process of evaluation is ongoing, from the planning of the program through its completion. It uses mixed methods data collection, from interviews and focus groups to surveys and language assessments. Furthermore, it must be *culturally responsive*, meaning that the values and traditions of the people who benefit from the program form the basis of the evaluative process. Ideas of success and failure are not imposed by an outside body, but are generated by stakeholders themselves. The evaluation must be useful, and stakeholders must engage with the evaluation in order to use it to make improvements and changes. Finally, it should account for a wide view of the program and include all aspects of the program in the evaluation.

Using the Culturally Responsive Evaluation framework, the Cherokee Nation was able to develop a set of indicators for evaluating their Immersion Preschool. The indicators included specific language skills (such as how well students can understand and speak Cherokee) as well as more general skills (such as how much students identify with Cherokee culture, how enthusiastic parents are about the program, and how much interest tribal leaders have in the program).

The results of the Culturally Responsive Evaluation model strike me as sharing much in common with other evaluation frameworks, such as the deliberative democratic framework (see section 6.1.3) proposed by House and Howe (2000), which is built upon inclusion, dialogue, and deliberation. This approach is also subjectivist, assuming that the evaluator cannot judge things as good or bad outside the situational context; there is no objective truth being sought, but rather emergent values are applied to evaluate the program. The authors emphasize the importance of true inclusion, which is critical in many endangered language contexts, where power dynamics may inhibit inclusivity and free sharing of ideas.

Much as language revitalization theorists and practitioners have highlighted the importance of ideological clarification through discussion, House and Howe (2000) note the importance of dialogue in evaluation. The authors not that it can be difficult for individuals and groups to determine their own interests because "[t]he real interests of an individual or group are not necessarily the same as the perceived interests" (p. 7). This has certainly been reported in seeking ideological clarification (Dauenhauer & Dauenhauer, 1998), and the idea of engaging in dialogue in order to get to the underlying goals and motivations can be helpful. In my own evaluation work in Teotitlán, I have found dialogue to be an important tool in unearthing underlying language ideologies that may be difficult to voice at first because of social pressures. Finally, deliberation is key to reaching a decision that stakeholders agree on. The deliberative process can help to ensure that all stakeholders are well served by initiatives. In the next section, I present some methodologies that may be useful to consider in deciding what types of initiative to pursue.

3.5 Methodologies for language teaching

Throughout my work with Zapotec language revitalization, I have incorporated insights from a variety of different language learning frameworks, using key elements from each to create a framework for Zapotec language revitalization that is increasingly suited to the context of Teotitlán, and to the specific needs of students. In the following subsections, I outline the features of several approaches that have inspired the Zapotec language workshops: (1) communication- and task-based learning; (2) student generation of learning materials; and (3) community-building activities. I have chosen to highlight these approaches here as I believe that the principles within these approaches could be adapted to a wide array of language revitalization contexts, namely because they address issues of *learner investment* (see section 1.3) that are crucial to success in language revitalization. *Learner investment* is defined by Pavlenko (2001) as the "complex, socially and historically constructed and dynamic relationship of the learners to the target language and their sometimes ambivalent desire to learn and to practice it," (p. 294). Engaging with the concept of learner investment allows us to consider a learner as part of a larger social system and think about how a learner's investment may continue to be shaped by new interactions with the language and its speakers. In the subsections that follow, I present three teaching methodologies that I hope to show can facilitate high learner investment, and thus better learning outcomes, especially in language revitalization contexts.

3.5.1 Communication-based instruction and task-based learning

Two frameworks that have proven very useful in Zapotec language revitalization—and, I argue, are both similar to and compatible with one another—are that of Communication-Based Instruction (CBI) (Supahan & Supahan, 2001) and Task-Based Language Teaching (TBLT) (Long, 2009, 2015, 2016; Riestenberg & Sherris, 2018). Let us first consider the

principles of CBI. I will then examine TBLT, and present an analysis of what these two approaches share in common, as well as how they can benefit language revitalization projects.

3.5.1.1 Communication-Based Instruction (CBI)

CBI focuses on using the target language for the purpose of communicating. Each lesson is developed around a communicative goal and built to prepare students to achieve that communicative goal in the target language. To get students to that point, the CBI framework lays out five steps, which I will illustrate with examples from the Zapotec language workshops for clarity. Step 1, *setting the stage*, is a moment where the focus of the lesson is highlighted, using the target language. In the Zapotec language workshops, we[21] tried to also use this step to link the new knowledge that students were expected to learn to something that they already knew. For example, when teaching about local fruits and vegetables (with the communicative goal of asking the prices of local fruits and vegetables in the market), students were asked to name any fruits or vegetables whose names they already knew in Zapotec. We then built upon this list with new words. Even if students supplied words that were not fruits or vegetables, their contributions were encouraged. Students were also encouraged to suggest fruits and vegetables whose names they wanted to learn in Zapotec. This allowed students with lower levels of Zapotec knowledge to still participate, drawing on their experiences and interests in Spanish and relating them to the class.

Step two, *comprehensible input*, presents key vocabulary in context. This can involve reading an illustrated storybook (such as Lazo Martínez, Lazo Pérez, Martínez Soza, Nee, and Rezvani 2020) or presenting the objects students are learning to talk about, either in real life or through images, for example. Supahan and Supahan (2001) describe how they also draw on insights from Total Physical Response (TPR) methods at this time, inviting learners to touch the objects or act out the verbs that they are learning. In the Zapotec context, this step has also required integration of a mixed-levels curriculum (Velasco Zárate & Ramírez García, 2017). As is the case in many language revitalization programs, students are of varying ages and Zapotec proficiencies, so not all students are ready to be learning the same content at the same time. In order to prevent more advanced students from becoming bored, or more beginning students from feeling overwhelmed, we try to design comprehensible input that can be interpreted on multiple levels. Take the pages from the book *Beniit kon xpejigan* (Lazo Martínez et al., 2020) as an example (figure 3.3). For beginners, this book allows students to begin learning the numbers, which are highlighted in red text and correspond with the number of items in the images. If learners are already familiar with the numbers, they may focus on the nouns that correspond to the objects in each picture: the chicken, the farmers, etc. More advanced learners have even more language to learn from, as they may be able to understand the action that is being described on each page. They might even pick up on the various grammatical constructions that are present in the text, such as prepositional phrases and verb agreement. This is also a place where the teacher can help

[21] In this section, I use 'we' to refer to the co-facilitators of the workshops, Rosita Jiménez Lorenzo and I.

1 tui

A kabedx te bedih gai,
"Zak xdilih!," rinium,
chiru kazebih Beniit
lo bii.

Un gallo canta,
"¡Buenos días!"
y Benita está
volando.

2 tiop

Beniit kaded kie' tiop
dbenih kud kabekidan
zhuub.

Benita pasa arriba de
dos personas mientras
siembran maíz.

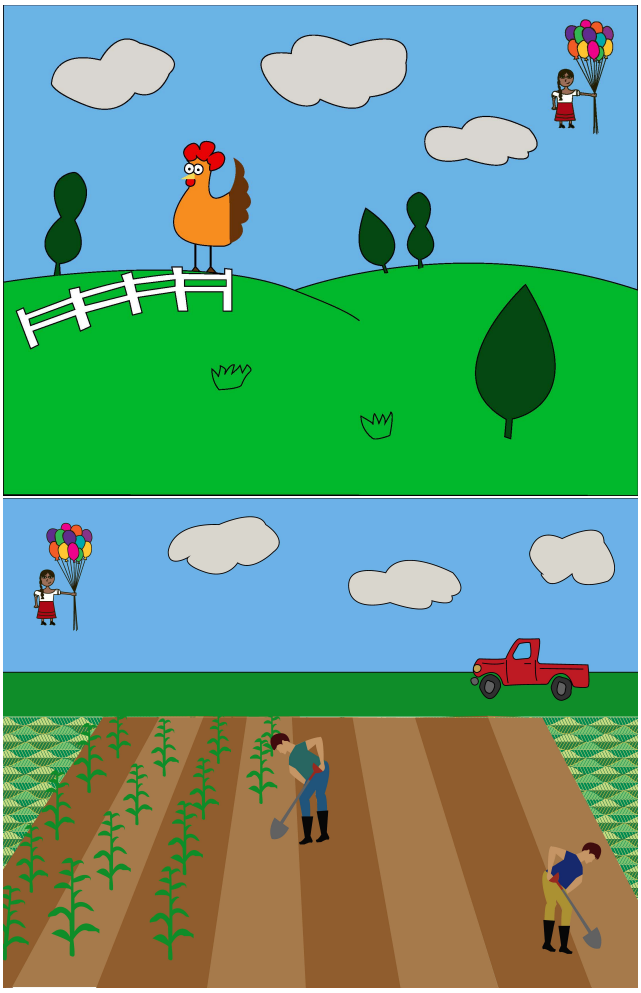

Figure 3.3: Pages from *Beniit kon xpejigan.* Text is presented in Zapotec (left) and Spanish (right), and can be translated as: "One. A rooster sings, "Good morning!" and Benita is flying. Two. Benita passes over where two people are planting corn."

to engage each students on a level that is appropriate for them. For example, I try to ask less advanced students simple, repetitive questions about the text as I am reading such as "How many are there?" or "What are these?" These basic questions can be answered with one word responses, using the key vocabulary highlighted in the text. At the same time, I also try to target questions like, "Where are they?" or "What are they doing?" to more advanced learners, who might be able to create a more complex, full-sentence answer.

Step 3, *guided practice*, requires instructors to facilitate students' practice of what they learned through the comprehensible input by using specific activities that require use of that language. I say *activities*, and not *exercises*, as this step is best carried out through interactive methods, such as games or tasks, rather than through repetition or other mechanical

exercises. During this phase, learners might practice their vocabularly by playing games like "Go Fish!" or "Concentration" (see section 4.6.4). These games require students to identify images of objects and state their name in the target language. In "Go Fish!" for example, students ask simple questions ("Do you have an apple?") and give simple responses ("Yes, I do!" / "No, I don't.") that require the ability to state and recognize the word for whatever objects are depicted. During the game, the teacher can also participate, and that way they are able to gently help learners if needed, supplying the word if a student forgets, helping with pronunciation, etc.

In the Zapotec workshops, step 4 (*independent practice*) and step 5 (*assessment*) are closely related. Independent practice requires students to use the target language without much support from the teacher, though the teacher may step in to assist if necessary. In assessment, students are also using the target language, but generally without any support from the teacher. This allows the teacher (or whoever is conducting the assessment) to gain a sense of how well the student is able to complete the activity on their own. In the Zapotec workshops for kids, there is no summative evaluation of any student; all assessment is formative (see section 6.1.2). For this reason, the teacher may also step in to assist students who are struggling through the assessment activities in order to provide real-time formative feedback that can help that student perform better. In other situations (such as formal school settings where students receive grades), steps 4 and 5 might be more distinct, with step 5 comprising the summative evaluation of student outcomes at the end of a lesson or unit that might be used to assign the student a grade or determine whether or not they should move to the next level.

Steps 3, 4, and 5 might also be repeated, either individually or in sequence, depending on how students are learning the material. If after one guided activity, students are still struggling to produce the target structures without the teachers' assistance, it might be useful to repeat another guided practice activity. Similarly, if students are still relying on some teacher assistance after an independent practice activity, that step may need to be repeated. Depending on the form that the assessment takes, this activity may also be repeated. If the assessment is truly summative and provides little or no useful feedback to help students improve, it is likely not worth repeating. However, if the assessment can be used formatively, it could be useful to repeat. For example, in the lesson whose communicative goal was to ask vendors the prices of their fruits and vegetables, the "assessment" involved students carrying out that task in real life, visiting the market and finding out the prices of various items. Given that the assessment involved a real communicative task, repeating this task can further ingrain the lessons students learned, as well as strengthen ties between learners and speakers. These ties are necessary for the establishment of sustainable language learning in language revitalization contexts.

In other situations, it might be useful to repeat steps 3, 4, and 5 in sequence, but focusing on different aspects of the language necessary for a particular communicative goal. Going back to the same lesson as an example, in order to get the prices of fruits and vegetables, one needs to know (1) the names of the fruits and vegetables; (2) the numbers; (3) how to form a question; and (4) how to interpret an answer. Within each skill, one might also want

to learn how to carry out this task through both oral and written means. Each of the four skills and two means of expression could have its own development using guided practice, independent practice, and assessment.

3.5.1.2 Task-Based Language Teaching (TBLT)

Another approach that we have relied on in Zapotec language classes is TBLT, particularly in the formation of 'assessments' in step 5 (as described above). Long (2016) defines *tasks* as "the real-world communicative uses to which learners will put the L2 beyond the classroom—the things they will do in and through the L2" (p. 6), and TBLT involves creating opportunities for students to (1) acquire the necessary skills and (2) carry out communicative tasks as they will need to in the 'real world.' The application of task-based learning to language revitalization contexts is not a novel idea, and is explored by Riestenberg and Sherris (2018); I relied heavily on their insights in thinking about how TBLT might be applied in Teotitlán. To begin, the authors note the importance of conducting a task-based needs analysis in order to determine the types of tasks that learners will need to be able to carry out in the target language. In the Zapotec case, this analysis has been carried out iteratively over time. At first, I worked with members of the community language committee *diidxih baa xteh gulaas*[22] to identify communicative contexts of interest. During the first workshop, I asked children what they enjoyed doing in Zapotec and what else they wished to learn, and I conducted a focus group with parents and children at the end of the workshop to discover what tasks participants wanted to see in future iterations. After the later workshops, I continued these focus groups and also carried out one-on-one interviews with children and their parents in which I asked for similar feedback (section 6.2.2). As Rosita Jiménez Lorenzo, the co-organizer of the workshops beginning in January 2019, became more involved in the project, her input was also incorporated into the course design.

Implementation of TBLT itself relies on ten *methodological principles* (MPs) laid out by Long (2009, 2015, 2016, cited in Riestenberg and Sherris 2018), and summarized in table 3.1. Riestenberg and Sherris reflect on how these ten MPs were applied in the context of Macuiltianguis Zapotec and of Salish Qlipse language learning. In what follows, I add my reflections on TBLT in Teotitlán to this discussion.

MP1 invites the use of the task, rather than a text, as the unit of analysis. This shifts the focus from learning grammatical features to learning for communication. This shift was particularly useful in the Zapotec context, as there is not an agreed upon standard form of the language, and variation is prevalent. Even elements that a language teacher might consider to be important for beginners, such as subject/verb agreement marking, have not been fully analyzed by linguists (Foley, Kalivoda, & Toosarvandani, 2017), and as a result it can be difficult to teach these elements explicitly. Though there are certainly patterns that could be taught, there are also contexts in which verbal agreement is optional, and these patterns of use are not uniform across speakers. By explicitly teaching students how to use

[22]This group is discussed in detail in section 4.2

MP	Description
1	Use a task (not a text) as the unit of analysis
2	Promote learning through doing
3	Use elaborated (rather than simplified or authentic) texts for input
4	Employ rich language input
5	"Chunk" learning through using phrases and collocations
6	Draw learners' attention to relevant aspects of linguistic forms
7	Provide negative feedback to help learners distinguish 'correct' and 'incorrect' forms
8	Respect the unique process of individual students through formative assessment
9	Promote collaboration and cooperative learning
10	Utilize individualized instruction

Table 3.1: Summary of the ten methodological principles (MPs) of task-based language teaching (TBLT), as described by Long (2009, 2015, 2016) and Riestenberg and Sherris (2018).

agreement markers, we as teachers would be conveying a value judgement about what forms *should* be taught. On the other hand, focusing on task completion and use of language by L1 speakers sidesteps this issue, as students can learn deductively, through exposure. Furthermore, the focus on task rather than text is similar in motivation to CBI's focus on the communicative goal rather than a grammatical target as the unit of analysis. In both cases, we are focusing on communication for a motivated purpose (such as completing a task) and using language as a tool rather than focusing on properties of the language itself.

MP2 encourages teachers to promote learning through doing. Students are to be given opportunities to use the language they are learning in real contexts. This MP has had significant benefits for children in Teotitlán in promoting investment from learners, families, and community members. When Zapotec learners are able to carry out a task in the target language, they have expressed satisfaction and enjoyment. This can be seen in the fact that students requested that we repeat activities of this nature. For example, students repeatedly requested to visit Zapotec-speaking vendors in the artisan market in order to carry out interviews during which they greeted the vendors and asked them basic questions about themselves and what they were doing. Again, this is similar to the focus on doing through communication that is the foundation of CBI; although TBLT allows for a larger set of tasks, nevertheless, performing the act of communication is key.

MP3 requires the use of *elaborated* texts, rather than either simplified or authentic (i.e. unmodified) texts, as language input. Elaborated texts are similar to authentic texts, but they include tools that facilitate learner comprehension, such as repetition and regularity, and a teacher using such a text may also explicitly draw learners' attention to key features. For Zapotec language workshops, the creation of elaborated texts was mostly through the creation of illustrated books in Zapotec. Through a collaborative process, I worked with

undergraduate linguists and artists at UC Berkeley and Zapotec speakers in Teotitlán to design unique and adapted stories with accompanying illustrations that would provide key lexical and grammatical information to students in an elaborated form. Take *Beniit kon xpejigan* as an example (figure 3.3; Lazo Martínez et al. 2020). This is not a simplified text, as it does not contain only short sentences nor is it limited to common or high-frequency words. At the same time, it relies on repetition (the use of a number on each page, presented in counting order) and regularity, as the general plot is repeated over and over: Benita travels and sees a set number of each item. Furthermore, in reading the story, I tried to facilitate further understanding by repeating similar questions on each page, generally, "What are these?", "How many are there?", and "What are they doing?" In second and third readings of the book, I also drew students' attention to grammatical features such as subject agreement on the verb, not explicitly, but through communicating using these features. Furthermore, the use of elaborated texts was appropriate for the mixed level class I work with (as discussed above), given that students of different levels can engage with the text in ways that are appropriate for their given skill level. Furthermore, an elaborated text is exactly the type of comprehensible input that is called for in CBI.

Closely related to MP3, MP4 calls for rich language input. In the Zapotec case, this is easily achieved through interacting with L1 speakers throughout town. At the same time, access to a wide variety of speakers also poses a complication, as oftentimes spontaneous adult speech in Zapotec can be complicated for a child Zapotec learner to comprehend. In Teotitlán, Rosita and I have found it useful to moderate the rich language input so that it not too overwhelming for students. We do this in a variety of ways, including providing students with the preparation needed to understand more of what's going on in the context. So, for example, when students watched a demonstration of how to make candles, they had first learned the words for the relevant materials. Furthermore, the instructors can also moderate the discussion by stepping in and asking clarification questions of the speaker that might be more at the students' comprehension level. They can also ask students questions to draw them into the conversation and increase their participation. For example, after a L1 speaker explains how a material is used, speaking in rich, complicated, natural language, the instructor can ask a simple question, like, "I'm sorry...what's that material? How do you say it in Zapotec?" This question can be aimed at the L1 speaker or at students. Either way, it brings the conversation back to a level that a beginning student would be able to comprehend and it can call those beginning students back into actively participating in the conversation.

MP5 suggests that teachers focus on "chunk" learning in which students see phrases and collocations repeatedly and learn to associate them with one another. Riestenberg and Sherris (2018) describe how they use an "overt plagiarism" task from Long (2015) in which students memorize a text line by line and are then given "chunks" of the text which they adapt. This is similar to what was done in the design of another set of books, based on *Oso pardo, oso pardo, ¿qué ves ahí?* (Martin & Carl, 2002). The book follows a repetitive format, with chunks of text repeated and only the animal and color changing from page to page, as illustrated in figure 3.4. The text of the first page reads, "White rabbit, white rabbit, what

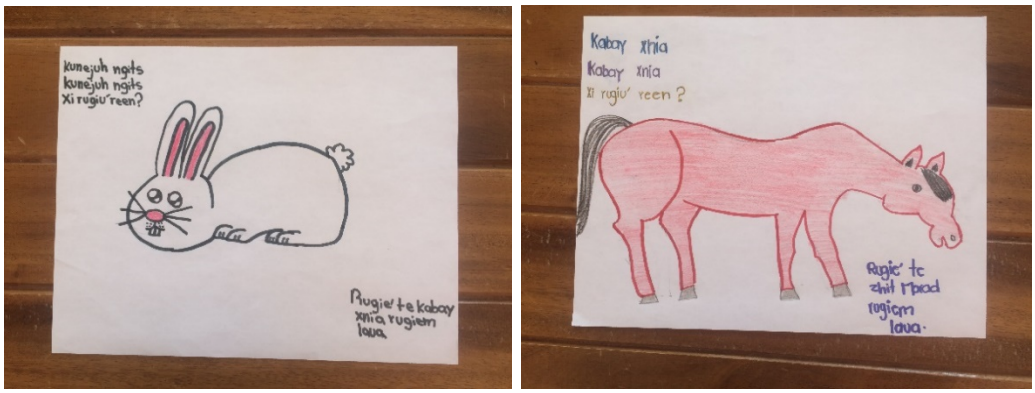

Figure 3.4: Pages from book based on *Oso pardo, oso pardo ¿qué ves ahí?* (Martin, 2002). Text at left reads: "White rabbit, white rabbit, what do you see there? I see a red horse looking at me." Text at right reads: "Red horse, red horse, what do you see there? I see a purple cat looking at me."

do you see? I see a red horse looking at me." The second page repeats parts of that text, reading, "Red horse, red horse, what do you see? I see a purple cat looking at me." This activity is discussed in greater detail in Nee (2020), but for the purposes of this section, I want to highlight the ways in which learning of language "chunks" is compatible with both task-based and communication-based learning. In this case, the chunks of language were used in preparation for a hike in the countryside, during which students were asked to name the plants and animals they saw, seeking help from L1 speakers when they didn't know the name for something. Thus, the chunks of language such as "what do you see?" and "I see..." were highly relevant for communicating to carry out the task.

As Riestenberg and Sherris (2018) explain, MP6 invites instructors to draw learners' attention to relevant aspects of linguistic form (such as grammar or pronunciation). While the lesson as a whole is to be guided by meaning, not structure, it can nevertheless be useful from time to time to highlight structural elements that are needed to achieve communication. This can be done either explicitly or implicitly. As the authors note, explicit grammar instruction can be difficult in a language revitalization context if the instructors don't feel confident in their language abilities or if they don't have the kind of linguistic training that could help them gain more conscious access to the subconscious patterns they use when speaking the language. In Teotitlán, MP6 was sometimes achieved explicitly and sometimes implicitly. In cases where forms were referred to explicitly, instruction was often carried out by me, using my knowledge as a linguist to explain concepts like tense/aspect marking. Grammatical forms were often implicitly highlighted by Rosita, who would recast utterances from students (and from me) in ways that sounded more fluent. For example, the aspect of the verb would be changed from habitual to progressive in a particular context. In the same way that CBI strives to keep communication at the center of a lesson, yet provide learners with the information necessary to achieve communication, MP6 keeps the task central to the

lesson but provides learners support in learning grammatical structures where they need it. In Zapotec language revitalization, this focus on communication paired with grammatical instruction when necessary has proven successful thus far.

MP7 suggests that instructors provide negative feedback to learners so that they can learn the difference between which forms are correct and incorrect in the target language. As Riestenberg and Sherris (2018) note, ideas about what counts as 'correct' speech in the context of language revitalization are complicated, and it is important to understand ideologies at play within a community about correcting language 'errors' as well as how such correction could impact speakers and learners. The authors suggest that "it may be particularly important in Indigenous language teaching to emphasize supportive, rather than face-threatening, means of providing negative feedback" (p. 449). I have found this to be true in Teotitlán, where I have observed very different reactions among students to negative feedback depending upon how it is framed. Students are often eager to correct their speech through "recasting" in which the instructor repeats back what a student has said with the error corrected, but they are less eager to continue trying when they are explicitly told that their sentence is incorrect or doesn't make sense. The stakes for speaking Zapotec 'correctly' are particularly high given the close relationship between language and identity in endangered language contexts. I have witnessed adults, for example, say things like, "How can you call yourself Zapotec if you don't speak Zapotec?" after a child has made a speech error, raising the stakes from a question of whether or not a sentence is grammatical to whether or not the child is a member of the community. At the same time, children who refrain from speaking Zapotec (instead of attempting to speak and making errors) are rarely criticized. Thus, some students seem hesitant to speak Zapotec (at least in public) for fear that their (perceived) lack of fluency will call into question their Zapotec identity within the community. This is consistent with findings within the second language acquisition literature more broadly (discussed in greater detail in section 3.5.3), as it has been noted that "in cases where legitimate identities cannot be fashioned through the second language L2 learning may be halted despite the high symbolic value of the L2" (Pavlenko, 2001, p. 285). In the Zapotec case, the refusal of community members to recognize Zapotec learners as carrying a Zapotec identity may discourage learners' persistence in learning the language, despite the high symbolic capital (section 1.3.3) that being a speaker of Zapotec brings.

While the consequences of discouraging learners of endangered languages through negative feedback could be high, as illustrated in the previous paragraph, it is also important to consider how a lack of negative feedback—especially in a context where there are few L1 speakers—could affect the trajectory of language change. This is brought up in Hinton (2011), as the author notes that with a large population of learners and a small population of L1 speakers, the potential for learners to dramatically change the way a language is spoken is high. In this situation, negative feedback provided by L1 speakers could help language learners to speak the language with fewer changes than if negative feedback were not provided. Nevertheless, the role of negative feedback should be considered within each context, taking into account the goals of the language learning and speaking community. In a place where fidelity to a particular form is less valued, perhaps less negative feedback should be

provided.

MP8 resembles suggestions from mixed levels teaching (Velasco Zárate & Ramírez García, 2017), calling for instructors to respect the unique progress made by individual students through providing formative assessment of how a particular learner is progressing. Riestenberg and Sherris (2018) follow the same approach as we have in Teotitlán, focusing on whether or not students are able to carry out the assigned task in the language as their means of assessing student learning. They formalize this by invoking a rubric designed to indicate the degree to which students were able to carry out the task. While the importance of formative feedback is not made so explicit in CBI, it is certainly consistent with that model; students can be expected to communicate different things with different levels of complexity depending on their starting point and other factors (such as age and access to L1 speakers outside of the classroom).

Long (2015) also highlights the importance of promoting collaboration and cooperative learning in MP9. In Indigenous language contexts, collaborative learning may be even more important for learners than in other contexts, as the community of learners may, in some cases, be the only community in which language can be used if the language has retreated from other domains. Riestenberg and Sherris (2018) describe the importance of this community-building in their work, noting that students were proud to identify as learners of Zapotec and use the language outside of the course as a way to mark their membership in that community. Furthermore, this community can help learners form "new speaker identities based on their group membership as modern language learners rather than solely on values of "tradition" and "past"" (Riestenberg & Sherris, 2018, p. 452). These observations are relevant in Teotitlán, and likely other situations, and the importance of community-building will be discussed in further detail in section 3.5.3.

The last MP, MP10, calls for individualized instruction. Again, this is in line with calls for mixed levels instruction (Velasco Zárate & Ramírez García, 2017), and fits into the model for CBI laid out above. While it is difficult to provide instruction that is perfectly tailored to the individual needs of each student, the principles of mixed levels instruction, in which each activity is designed to be carried out at a variety of different levels, are relevant for language revitalization instruction. Instructors can then personalize activities following the level which seems most appropriate for each learner. There are a number of ways that this can be carried out: creating different texts for comprehensible input; asking students of different levels to answer different difficulties of questions; or asking more advanced students to support their less advanced classmates during an activity.

Overall, what I hope to have shown in this section is that the principles of CBI and TBLT are compatible with one another, and with language revitalization. Crucially, both approaches focus on active participation—through communication and the completion of tasks—rather than on production of grammatical forms. Given the discussion of learners' goals in section 3.1.4, it might seem counterintuitive to focus on communication when I've argued that for many learners in revitalization contexts, goals are less about communication (as there may not be a speaker community) and more about building a sense of community with other language learners or working towards goals of self-determination as a minoritized

community. However, communication can be a key factor in developing a sense of belonging and community, and carrying out tasks collaboratively can help to build on that sense of community that a focus on grammatical form might not be able to achieve so easily. While certainly a community of learners can form with a focus on structural elements of language,[23] it might be easier for that community to develop through collaborative completion of tasks.

At the same time, I hope that this discussion has shown a number of ways that CBI and TBLT can be adapted to the particular circumstances of any language revitalization program. As each community, and each learner, is unique, I find it useful to lean on the general principles laid out in these two methodologies, focusing more or less on particular principles as is required for a given context. As will be discussed in the next two subsections, these approaches can also be combined with other methodologies to strengthen learners' investment in language learning.

3.5.2 Student generation of learning materials

Another method that can improve learners' investment in language learning is to involve students in the generation of course materials. This changes the dynamic from one in which the teacher reinforces their power by distributing materials to learners who consume those materials to a dynamic in which power in the learning community is distributed more equitably. Students are not required to be only consumers of knowledge, but also generators of knowledge. This gives them additional authority as language users who are authorized to create and use language. Furthermore, the materials that students create are used in the classroom, becoming resources that other learners rely on. This parallels the logic of CBI, where learning is centered not on a linguistic unit, but on a communicative task. Similarly with student-generation of materials, production centers not on the creation of materials for their own sake, but on creation of materials for the purpose of their *use* by others. Thus, the work that students create is given importance through its utility, and students may feel more invested in their work if they can see it as benefiting the community of learners. This is supported by Cummins, Early, and Stille (2011), who describe how when learners feel empowered, have their identities affirmed in their schooling interactions, and expect that their opinions are listened to and respected, more power is generated and shared among the group, and a hierarchical power relationship between a dominant teacher and subordinate students is challenged (p. 25).

In some models of language learning, such as traditional immersion models, students may be asked to stay entirely in the target language and may be prohibited from using other languages during the learning process. This type of monolingual policy, even in the target language, may promote the idea of an idealized monolingual speaker (or a bilingual speaker who adeptly separates their linguistic knowledge into the two relevant language categories, avoids language mixing, and is similar in linguistic behavior to a monolingual speaker of

[23]See section 4.2 for a discussion of how the community language committee in Teotitlán has developed around a focus on relating modern Zapotec to colonial Zapotec, focusing on form rather than on communication.

each language). When an emergent multilingual language learner is confronted with this goal of monolingual-like performance, it may not fit well with the learner's self-identity as a multilingual language user who draws on knowledge from all the languages that they know and use and mixes languages to communicate effectively with other multilinguals. If a learner does not feel that their identity is supported in the learning environment, this can decrease investment. Furthermore, in some educational contexts, written literacy may be emphasized over other literacies, particularly the forms of literacy (such as oral literacy) that may be more typical for endangered languages. This creates a similar crisis of identity for learners who have skills in literacies that are undervalued in the classroom.

These conflicts of identity can be mitigated by using an Empowerment framework (Cummins et al., 2011) in which all of students' linguistic resources and knowledges are integrated as learning resources and given equal respect in the classroom. This helps with the collaborative generation of power, as students can share their expertise with others in the learning community. It is also in keeping with previous research on the importance of connecting new ideas to prior knowledge (which is also a key part of the CBI framework). Students' first languages are part of their prior knowledge, and inviting students to use that language as part of their learning process can thus facilitate learning. Cummins and Early (2011) describe how *identity texts* can be used to crease a space that is more empowering and accepting of students emerging multilingualism. Students are encouraged to create texts (whether written, visual, oral, or through other means) using their linguistic resources as they see fit. Such projects affirm learner's changing multilingual identities and can increase learner investment, as learners may feel that their identities are being perceived in a way that is more in line with how they self-identify.

Furthermore, in a mixed-levels class (as is the case in the Zapotec language workshops), inviting students to create materials for learning is way to engage students at their individual levels. Of course, students need access to the tools, resources, and skills necessary to create these materials, but the process of equipping students can be carried out collaboratively. For example, in an activity where students generate a list of vocabulary related to a topic or task, a student who does not know a word in the target language can ask for help from a classmate or teacher in using the dictionary to find the word they wish to contribute. Furthermore, when students are encouraged to participate in collaboratively creating materials, it often pushes them to learn ways to find knowledge on their own. In this example, instead of a teacher providing a list of words in the target language, students learn how to find words they wish to learn and share them with their classmates. Thus, students develop skills for becoming independent language learners.

Through inviting students to share their expertise and work together to create materials, individual identities can be recognized, affirmed, and respected, and community can be strengthened. As will be discussed in the following subsection, this aspect of community-building can also improve learner investment, and thus learning outcomes in turn.

3.5.3 Community-building activities

Building upon what I have already discussed in this section regarding the importance of considering a language learner not as an isolated, fixed individual but rather as a dynamic participant in social systems, here I'd like to consider the role that community-building can have on language revitalization outcomes. As shown in section 3.1.1, 'language revitalization' can include broader projects, described by Leonard (2012) as 'language reclamation' which involve efforts of decolonization and self-determination. But self-determination requires some sense of 'self' or conception of the community that is to be self-determined. In helping to form this sense of 'self' at the community level, community-building activities can be useful.

Other scholars comment on the centrality of *relationships* in language revitalization and use. Hermes et al. (2016) point to the role of the community in successful language revitalization, noting that "communities—that is, relationships between people who want to communicate in the Indigenous language—are the central motivating force in revitalization and learning a language" (p. 277). The causes of language endangerment are often related to circumstances and policies that sought to dismantle these relationships and separate communities, and thus if community is central to language revitalization, learners will benefit from efforts to nourish and strengthen community.

Of course, this relates back directly to learner investment (section 1.3). Learners are not inherently *motivated* to learn a language, but rather their *investment* may ebb and flow depending on a number of factors that can be mediated by learners' involvement with a community of language users and learners. For one, if a learner's identity is affirmed through their acceptance by a community, that can increase investment. Moreover, a learner's acceptance into the community of language users opens up new opportunities for meaningful, contextualized language exposure and use. Learners may feel empowered by community support to exert their agency and affirm their identities as language learners and competent users of the target language. In Chapter 4 (especially section 4.6.6), I will explore in greater detail how community-building activities, scaffolded by CBI and TBLT, and incorporating the use of learner-generated materials, promoted learner investment and improved learning outcomes in the Zapotec language workshops.

Furthermore, community-building pairs easily with participatory action research. Given that PAR involves setting the goals of open communication, equitable participation of stakeholders, and respect among community members, the PAR approach is also consistent with facilitating community-building through communication and mutual respect. In the Zapotec language revitalization workshops, the discussions that were conducted as part of PAR indeed had an effect of supporting an increased sense of community, alongside other community-building activities such as field trips with students and their families and shared meals.

3.6 Conclusion

In the previous section, I elaborated on three teaching methodologies that are particularly useful in language revitalization, and which are compatible with one another, mutually reinforcing the importance of communication, identity affirmation, and community-building. I hope that this discussion has served to support the observation of Lomawaima and McCarty (2002) that "Languages are not mere abstractions or replaceable products; language issues are always "people issues"" (p. 296). In the next chapter, I will provide more concrete examples through my work in Teotitlán del Valle showing how these theories have influenced the community of Zapotec language learners that I have worked with.

In this chapter, I also presented a definition of 'language revitalization' and situated my understanding of language revitalization alongside related but differing conceptions of the concept. Moreover, I discussed the factors that can lead to language endangerment. Given these factors, the teaching methodologies I have highlighted are particularly relevant as they can address many of the root causes of language endangerment. By building community and increasing learner investment, several of the factors leading to language endangerment can be mitigated, including loss of members of the speaker community, social dislocation, and the development of negative language ideologies. Furthermore, I highlighted ways in which language revitalization is similar to other types of language teaching and learning, but also some of the crucial differences between these types of language learning. These differences have led me to rely heavily on the three teaching methodologies outlined in the preceding section, as these methodologies focus on what I perceive to be the crucial factors in successful language revitalization, namely affirming learners' identities and roles within their communities.

Of course, each language revitalization context is unique, and I hope that the discussion in section 3.2 is useful for language activists and language revitalization practitioners as they seek to understand how key facts about a given situation might affect language revitalization programs. Overall, I hope that the discussion presented in this chapter can empower language activists and language revitalization practitioners to better achieve alignment between stakeholder needs and goals on the one hand and strategies for language revitalization on the other. In the following chapter, I will show more concretely how this type of alignment has (and has not) been achieved in the Teotitlán del Valle Zapotec language workshops for kids.

Chapter 4

Implementation of Zapotec language workshops

In this chapter, I present an overview of how the Zapotec language workshops in Teotitlán were designed and implemented. Because this research was carried out following a participatory action research model, which relies on formative evaluation and (re)adjustment of the program model, the account that I present here does not follow a linear trajectory, but rather traces a winding path towards progress that (ideally) fits with community needs. At the same time, some of the core principles have remained throughout the project, and these I will highlight as I explore the program goals and logic model (section 4.5) as well as a variety of methodologies for language teaching from which I drew in developing specific curricula.

This chapter will also present an overview of some of the other language initiatives that have been taking place in Teotitlán. I argue that, especially for a relatively large community like Teotitlán del Valle (with about 4,000 speakers of Zapotec and a total population of over 6,300) in which members have a diversity of interests and goals,[1] language revitalization does not require that "the community" as a whole settle on a singular plan for language revitalization. Rather, it is useful and beneficial for the community overall for there to be multiple language revitalization programs that address the unique needs of different sectors of the population in Teotitlán. These multiple programs can complement one another and serve to promote the language in ways that are uniquely suited to the specific populations that take part in them.

In section 4.1, I begin to explain how this project was formed. Then in section 4.2, I present an overview of some other language revitalization initiatives that were active in Teotitlán at the time of this study. Section 4.3 provides key background information (following the factors presented in chapter 3) that shaped the direction of the Zapotec language workshops for kids. Next, I present some details on the program participants, followed by the goals and logic model of the initiative. Finally, I pick back up from where I left the discussion

[1] More information about language diversity and language use in Teotitlán can be found in chapters 2 (which describes reported language use) and 5 (which describes observed language use).

that begins in section 4.1, elaborating on how the program continued to be implemented and some of the results that have come out of it to date.

4.1 Project history and development

As discussed in chapter 1, it is important to consider my positionality as a US American, born and raised outside of Chicago, Illinois, who first became involved in Teotitlán as an undergraduate researcher in January, 2012. The previous winter (January-March 2011), I had participated in a study abroad program in Oaxaca City through the University of Chicago, during which I was exposed to Oaxaca's great linguistic diversity. I returned in 2012, and I began forming connections with people in Teotitlán, where I was volunteering teaching English classes through *Fundación Envia*, a microfinance non-profit active in Oaxaca. At the same time, I began investigating Zapotec language use in Teotitlán, and in May 2012, I graduated from the University of Chicago having submitted an honors thesis which focused on the syntax of Spanish/Zapotec code-switching (Nee, 2012). Following my graduation, I moved to Oaxaca City to begin a career as an English teacher.

Over the next three years, while I worked as a full-time English teacher and lived in Oaxaca City, I often visited Teotitlán, where my acquaintances gradually became my close friends. In 2014, I began taking courses in Teotitlán del Valle Zapotec, taught by Janet Chávez Santiago through the *Biblioteca de Investigación Juan de Córdova*, which dramatically increased my Zapotec language skills and solidified my connections with people in Teotitlán. In 2015, I decided to take Zapotec study more seriously, pursuing a PhD in linguistics at the University of California, Berkeley. At first, I pictured myself developing into a theoretical syntactician, but as I spent more time in Teotitlán, my goals shifted: my friends, colleagues, and neighbors in Teotitlán were not so interested in my theoretical linguistic questions, and I became more interested in working on issues that directly responded to community desires for language maintenance and revitalization.

In December 2015, I began to collaborate with a group of language activists (whose work was supported by the municipal government) known as *didxih baa xteh gulas* (Sacred word of the Zapotecs), led by Don Adrián Montaño Gutiérrez. We met to discuss possibilities for the development of a community-proposed orthography,[2] which was eventually presented in Oaxaca City in April 2016.[3] When I returned to spend the summer in Teotitlán in 2016, I continued collaborating with the committee as they worked on a 'Paisaje Lingüístico' (Linguistic Landscape) in collaboration with the *Centro de Estudios y Desarrollo de las Lenguas Indígenas de Oaxaca* (CEDELIO), through which various important landmarks throughout town were identified, their names in Zapotec written in the community orthography, and

[2]Members of the group considered this project to be 'community-proposed' because the committee was largely made up of residents of Teotitlán, a general invitation had been made to any interested residents, and all meetings were held in Teotitlán and open to the public.

[3]This was not and is not the only proposed orthography for TdVZ. See Lillehaugen (2016) and Harrison, Lillehaugen, Fahringer, and Lopez (2019) for further discussion.

signs indicating their locations posted throughout town (further discussed in section 4.2.3 and pictured in figure 4.2).

Around the same time (summer 2016), Professor Kalinka Velasco Zárate, of the *Universidad Autónoma Benito Juárez de Oaxaca* (UABJO), initiated another language revitalization program in Teotitlán, in which she hosted a language workshop for kids focused on teaching Zapotec to a mixed-levels group of students (Velasco Zárate & Ramírez García, 2017). I was able to participate in her workshop and observe the success that she had in promoting positive views around Zapotec language and language use for the young participants in the program. Although some members of *didxih baa xteh gulas* expressed skepticism towards the project at first, once they saw the class in action, some expressed a shift in opinion: they saw that Professor Velasco Zárate was able to motivate students to use the language and take pride in their Zapotec heritage, and members expressed positive views of the language workshop overall.

When I returned in summer 2017, I explored the possibility of assisting in hosting another language workshop with Professor Velasco Zárate and the language committee. However, Professor Velasco Zárate was busy with other projects, and the committee was interested in hosting different types of initiatives, such as Zapotec writing workshops for adults. Nevertheless, both Professor Velasco Zárate and Don Adrián Montaño Gutiérrez of the language committee encouraged me to go forward in planning a language workshop for kids based on Velasco Zárate's model, so I began to develop my own program. I had already done some background research as part of my coursework at Berkeley, so I ran my proposal by Professor Velasco Zárate and Don Adrián, who approved, and I moved forward with implementing the first language workshop. In section 4.6, I discuss in detail how the workshops were implemented, but I first turn to an examination of what other language revitalization initiatives were underway in Teotitlán during this project to better demonstrate how the language workshops fit into a rich tapestry of language promotion in Teotitlán.

4.2 Other language revitalization initiatives in Teotitlán

4.2.1 Legal status of Zapotec in Mexico

On March 13, 2003, Mexico (under then-President Vicente Fox Quesada) passed the Law on General Linguistic Human Rights of Indigenous Communities (*Ley General de Derechos Lingüísticos de los Pueblos Indígenas*, 2003). This law recognized the Indigenous languages of Mexico as being protected and giving individuals and communities the right to use and develop Indigenous languages (Article 1). Furthermore, Article 3 notes, "La diversidad de lenguas indígenas es una de las principales expresiones de la composición pluricultural de

la Nación Mexicana."[4] Crucially, it is noted that "Las lenguas indígenas que se reconozcan en los términos de la presente Ley y el español son lenguas nacionales...y *tendrán la misma validez*" (emphasis mine).[5] The law requires not only that the federal government and local governments recognize and protect Indigenous languages, but also that they *promote* them (Article 5). This includes dedicating a portion of airtime on media outlets for Indigenous languages and cultural traditions (Article 6). However, in my personal experience, it is mostly (if not exclusively) the cultural traditions (such as music, dance, and handicrafts) that gain coverage on media outlets; it is extremely rare to hear Indigenous languages broadcast on large media outlets (though community radio stations are common and do provide coverage in Indigenous languages). Similarly, Cruz and Robles (2019) report that in Mexico "there is little space for Indigenous languages in mass media. Most local television and radio broadcasts are solely in Spanish" (p. 79).

The law also declares that the Indigenous languages will have an equal status with Spanish for submitting official documents and soliciting public information. The federal government, according to the law, will make available laws, programs, and other services in the language of the beneficiaries of these services (Article 7). Article 11 also states that obligatory education will be bilingual and intercultural, and will promote respect for individuals' identities as well as their languages.

However, it is noted in various Articles (7, 10, 12) that exactly which administrative sectors will use which Indigenous languages in which contexts is to be worked out in consultation with Indigenous populations and government agencies. Article 12 states that "La sociedad y en especial los habitantes y las instituciones de los pueblos y las comunidades indígenas serán corresponsables en la realización de los objectivos de esta Ley."[6] This sharing of responsibility places a large burden on Indigenous communities to advocate for their own linguistic rights, despite the passing of this federal law.

Article 13 provides for some more concrete steps to be taken to support Indigenous languages, including section VI which calls for the state to "Garantizar que los profesores que atiendan la educación básica bilingüe en comunidades indígenas hablen y escriban la lengua del lugar y conozcan la cultura del pueblo indígena de que se trate."[7] However, as will become apparent in the following sections, this law has not been widely enforced, and bilingual schools often lack teachers who speak the local Indigenous language. Article 14 called for the formation of the *Instituto Nacional de Lenguas Indígenas* (INALI), a decentralized government agency whose goal is the promotion, preservation, and development of the Indigenous

[4] "The diversity of indigenous languages is one of the principal expressions of the pluricultural composition of the Mexican Nation."

[5] "The Indigenous languages that are recognized by the terms of the present law and Spanish are national languages...and *they will have the same validity*" (emphasis mine).

[6] "Society and especially the inhabitants and institutions of Indigenous towns and communities will be co-responsible for the realization of the objectives of this law."

[7] "Guarantee that the teachers who work in bilingual elementary education in Indigenous communities will speak and write the language of the place and will know the culture of the corresponding Indigenous town."

languages of Mexico. Part of this mission included carrying out a census to determine the number of speakers of each Indigenous language, as well as to support research into Mexican Indigenous languages. INALI has carried out its mission and produced a catalogue (updated regularly) of Indigenous languages of Mexico. As of 2009, the INALI report *Catálogo de las Lenguas Indígenas Nacionales: Variantes Lingüísticas de México con sus autodenominaciones y referencias geoestadísticas* (2009) names 11 linguistic families, 68 subfamilies, and 364 "linguistic varieties" (defined by being mutually unintelligible with other varieties and by having their own autonym).[8]

In 2007, Mexico also voted in favor of the *United Nations Declaration on the Rights of Indigenous Peoples* (United Nations, 2007), which includes Article 13, declaring that "Indigenous peoples have the right to revitalize, use, develop and transmit to future generations their histories, *languages, oral traditions*, philosophies, *writing systems and literatures*" (emphasis mine). This declaration, too, supports the rights of speakers of Indigenous languages of Mexico to continue to use their mother tongues. Furthermore, Article 14 of the UN declaration states that "Indigenous peoples have the right to establish and control their educational systems and institutions providing education in their own languages, in a manner appropriate to their cultural methods of teaching and learning," thus reinforcing (and, in fact, going further than) Article 13 of Mexico's law. Thus, the outward stance taken by the Mexican government is certainly one of supporting Indigenous languages within the nation. What will be discussed below will help the reader understand the extent to which these laws have (and have not) been carried out.

4.2.2 Initiatives in schools

Children in Teotitlán progress through formal schooling, beginning with three years of preschool, followed by six years of elementary school, three years of middle school, and three years of high school (known as 'preparatoria') before potentially seeking a college degree or other higher education. In Teotitlán, there are one preschool, two elementary schools, one middle school, and one high school. In addition, some families choose to send their children to schools elsewhere, particularly in Oaxaca. The following sections present an overview of the efforts present in the public schools of Teotitlán to promote the Zapotec language.

Bilingual preschool. Teotitlán del Valle's preschool, *Centro de educación preescolar bilingüe Josefa Ortiz de Dominguez*, is located in the town center. This school is designated as a bilingual school and as such offers some instruction in Zapotec for children. The official national policy is that all children should receive pluricultural instruction in public schools in which both Indigenous and Spanish languages and cultures are integrated in an enrichment model where they are equally valued (Hamel, 2017). However, Mexico also employs a unified national curriculum and requires all schools, including bilingual schools in

[8]The catalogue describes linguistic varieties as being (potentially) below the level of language and subfamilies being above the level of language, depending on the number of linguistic varieties and their relationships to one another (*Catálogo de las Lenguas Indígenas Nacionales: Variantes Lingüísticas de México con sus autodenominaciones y referencias geoestadísticas*, 2009, p. 29).

Indigenous-dominated areas, to cover that curriculum. While some materials are available in Indigenous languages, not all materials are available in all languages.[9] Beginning in 2010, nationally, Indigenous languages began to be taught as a subject (similar to the way that English is taught as its own content course), rather than being used as a medium of instruction (Hamel, 2017). However, curricular materials for teaching Indigenous languages as a subject are not available through the Ministry of Education for all languages, and as a result, schools tend to focus not on the language aspect of pluricultural education, but rather on including content from and appreciation of multiple cultures (Hamel, 2017).

I spoke with the director of the school, Maestra América Fería Cuevas,[10] to learn more about the role that Zapotec plays in the preschool in Teotitlán specifically. According to Maestra América, the main way in which the preschool is able to promote the Zapotec language is through promoting the importance and value of the language. This is in agreement with the national trends reported by Hamel (2017). Maestra América reported that of the students, approximately 10% understand Zapotec, and less than 5% are able to speak the language. This low level of language comprehension makes it difficult for students to participate in Zapotec language activities.

Another barrier to Zapotec language education at the preschool is that there are no speakers of Zapotec from Teotitlán del Valle who are currently teaching at the school. Although there are Indigenous teachers, they come from various other locales—whether Zapotec-speaking regions with other varieties such as the coast of Oaxaca or Ocotlán, or regions with an entirely different language such as Triqui or Mixtec.[11] In the past, there were speakers of TdVZ working in the school, but at the time of writing this is not the case.[12]

As a result, the school has relied heavily on voluntary, unpaid collaboration with parents for Zapotec language activities. In the previous school cycle, Maestra América reported that the school hosted a program in which parents were invited (in fact, required) to visit the school at various times in order to share and act out stories in Zapotec and Spanish. That program, however, has now ended. Another completed program was the celebration of International Mother Language Day on February 21, 2019,[13] during which time students

[9]In my experience, I have never seen textbooks in TdVZ created to teach the national curriculum in public schools.

[10]Personal interview, December 16, 2019.

[11]Note that this is in violation of Article 13 of *Ley General de Derechos Lingüísticos de los Pueblos Indígenas* (2003), which guarantees that teachers who work in bilingual education will speak and write the language *of the place where they work* and not just any Indigenous language of Mexico.

[12]The selection and placement of teachers is not locally controlled in Teotitlán; rather, teachers are assigned to posts by officials from outside of Teotitlán.

[13]International Mother Language Day is a celebration that was proposed by Bangladesh and supported by UNESCO in November 1999 (*International Mother Language Day 21 February*, 2020). It has been celebrated yearly in February since 2000, and it was welcomed by the UN General Assembly in 2002 (*International Mother Language Day 21 February*, 2020). This day is recognized by the federal government of Mexico as well as many national, state, and local organizations that support Indigenous languages, and on February 21 of each year, events are held in commemoration of the day.

formed a parade around town to celebrate the importance of Zapotec.

Within each school day, the half hour between 12 and 12:30 is designated as time for Zapotec. However, given that teachers are not Zapotec speakers, it is difficult to carry out Zapotec language activities during this period. Two parents are meant to accompany the students each day at this time, but Maestra América reported that there has been some push-back from parents who feared that their Zapotec language abilities are not good enough to participate.[14] Nevertheless, she reported that some parents attend the classes and share songs, riddles, and poems. Another program which was ongoing at the time of writing is the use of the Zapotec language 'ludoteca' (toy library). Students enrolled in Zapotec language classes at the local bicultural high school (discussed further below) assisted in the design and creation of various toys and activities in Zapotec, which were then installed in the preschool. The various preschool classes each visit the 'ludoteca' once per week. During this time, they are also accompanied by parents.

Finally, Maestra América mentioned that a difficulty that the preschool has faced in promoting Zapotec is that there are disagreements around what a standardized writing system should look like.[15] She noted that the creation of written materials has caused some conflict among Zapotec speakers which has affected the school's ability to implement their Zapotec programs. For this reason (and given that the preschool students are mostly pre-literate anyways), the school has tried to focus on teaching and learning spoken Zapotec, using illustrations rather than text as tools for the students. Any text has been used used mainly as a guide for instructors and parents.

Overall, Maestra América underscored the importance of the work that the preschool is doing to raise awareness of the importance of the Zapotec language and culture—both for students and their parents—through the aforementioned initiatives, as well as projects that are not language-specific. For example, there is an educational module called 'historia de mi pueblo' (history of my town), during which students are asked to collect information from their family members about the history, culture, and traditions of Teotitlán. As Maestra América explained, through these initiatives, the school is adding "un grano de arena" ('a grain of sand') to students' understanding and appreciation of their heritage. Furthermore, Maestra América continues to seek collaboration with other teachers and institutions who may be able to help support Zapotec language education at the preschool.

Extracurricular course at elementary school. As mentioned above, Teotitlán del Valle has two elementary schools. These two schools occupy the same physical space, but one takes place during the morning and the other during the afternoon. I spoke with Maestra Marcelina Nolasco Toledo,[16] director of the afternoon school *Escuela Primaria Margarita de Maza*, who reported that of the school's 200 students, approximately 80 are speakers of Zapotec. Although the morning school did not have any initiatives for the Zapotec language, the afternoon school began offering after-school Zapotec classes in early 2019. When Don

[14]See chapter 6 for more discussion of parents' views on Zapotec language use in Teotitlán.

[15]See Lillehaugen (2016), Harrison et al. (2019) for further discussion of Zapotec orthographic development.

[16]Personal interview, December 17, 2019.

Adrián Montaño Gutiérrez and Sr. Faustino López Morales, members of the *didxih baa xteh gulaas* language committee, learned of a desire at the elementary school that Zapotec be taught in the afternoons, they began to offer free classes. These classes are extracurricular and take place during the hour after school finishes at six in the evening. Each group of students meets once per week: first graders meet on Mondays; second and third graders on Tuesdays; and fourth through sixth graders on Thursdays.

According to Maestra Marcelina, the Zapotec classes were carried out through the spring term in 2019. At the beginning of the term, attendance was high, with estimates of as many as 100 students enrolled; however, as the semester wore on, attendance decreased. Nevertheless, progress was made: the school collaborated in creating a program for the community's celebration of Mother Language Day that included students reciting poems, singing songs, and performing scenes in Zapotec and Spanish. Although the program was set to continue, given that attendance has decreased, at the time of my conversation with Maestra Marcelina, she reported that the classes were frequently cancelled.

Maestra Marcelina described some barriers to the program's success, as well as her hopes for the future in our conversation. She described the shortcomings of having Zapotec as an extra-curricular subject, which requires that students—already tired from the school day—stay focused on academics for an additional hour. Furthermore, in the winter months, the sun sets around the time that school ends, and thus students who stay for the Zapotec class must return home in the dark.

Maestra Marcelina noted her interest in making Zapotec one of the subjects covered during the school day and has asked the municipality for permission to use forty minutes during the school day for classes such as Zapotec, English, and arts. Although she received permission from the municipality, it has been difficult to find funding to pay instructors to give such classes. Furthermore, she must ensure that parents support the idea of shifting some instructional time towards Zapotec.[17]

Another complication has arisen through collaboration with the *Secretaría de Asuntos Indígenas* (Secretary of Indigenous Issues).[18] This state office offered to pay a stipend to instructors and students who participated in Zapotec language classes. However, this scholarship was only to be paid to adults. Through confusion over the scholarships, many students signed up for the Zapotec course at the elementary school believing that they would receive a stipend, but unfortunately, no stipends were awarded to the children. This caused some problems for Maestra Marcelina, and she mentioned that she hoped the after school classes would be able to resume regularly in March of 2020, possibly with support from 'Asuntos Indígenas.'

Middle school courses. Beginning on September 9, 2019, Zapotec classes have been included as part of the required middle school curriculum at Teotitlán's *Escuela Secundaria General "Augustín Melgar."* These classes are taught by Maestro Zeferino Mendoza

[17]See chapter 6 for additional discussion of parents' views on Zapotec language learning and use.

[18]The name of this office was changed in February of 2019 to Secretaría de los Pueblos Indigenas y Afromexicano (*Cambiarán SAI a Secretaría de Pueblos Indigenas y Afromexicano*, 2019), but individuals I interviewed continued to refer to it as 'Asuntos Indígenas' or 'Oficina de Asuntos Indígenas.'

Bautista,[19] who reported teaching approximately 400 students, spread across three grades of four classes each. Each class is exposed to one hour of Zapotec language instruction per week. Many students come from Teotitlán or the neighboring town of Macuilxochil (also Zapotec-speaking), though others come from Oaxaca City, Tlacolula, and Ciudad Yagul. Maestro Zeferino estimated that approximately 30% of the students are fluent speakers of Zapotec, 30% are passive speakers, and 30% are not speakers.[20]

Maestro Zeferino has worked not only with students, but with other teachers at the middle school as well. He commented that an issue with implementing the courses has been reaching an agreement among teachers, students, and parents about what the goals of the course should be. Unlike for other courses, there is no national standard for teaching Zapotec as a language subject. It appears that Maestro Zeferino has had freedom in developing and implementing his own course. However, other teachers, school administrators, students, and parents also have, and voice, their opinions about what should and should not be covered in the course, at which point disagreements can arise amongst the various stakeholders. For instance, at the time of my conversation with Maestro Zeferino, students were learning a translation of the national anthem in Zapotec, despite the fact that Maestro Zeferino does not see this as his ideal project for the students, given that the project essentially involves calquing from Spanish into Zapotec, including content that is not culturally relevant, and is in fact colonial and nationalist in nature. At the same time, Maestro Zeferino has an additive outlook on the project, commenting that any opportunity to be in the classroom using Zapotec with the students is a good thing.

Furthermore, like Maestra América, Maestro Zeferino expressed during our interview that he has focused on teaching orality rather than writing, in accordance with the oral tradition of the Zapotec language (and, he noted explicitly, in contra to the Western imposition of writing as a necessity). He recognized the ideological nature of deciding to write one way or another, and as this has not been the focus of his course, he has encouraged students by not telling them that what they have written is 'right' or 'wrong,' but rather by pointing out that there are multiple writing options and they will make a choice as to what they'd like to do. According to Maestro Zeferino, this has allowed for a greater acceptance of the linguistic diversity that is present in the classroom, Teotitlán, and Oaxaca more broadly.

High school courses at BIC. At the high school level, Teotitlán del Valle is home to the *Bachillerato Integral Comunitario 29* (BIC; founded in 2009), through which various Zapotec language initiatives are offered. I spoke with Maestro Lorenzo Jiménez Martínez, who has been in charge of the Indigenous language classes for the past three years.[21] It is important to note that students at the BIC are not all from Teotitlán del Valle; in fact, students come from a variety of Indigenous and non-Indigenous backgrounds. Of the 230 students Maestro Lorenzo reported having at BIC at the time of our interview, he identified 60 as speakers of Indigenous languages: various varieties of Zapotec (25 from Teotitlán, 15

[19]Personal interview, December 24, 2019.

[20]I did not clarify with Maestro Zeferino how he defined "fluent" speakers and "passive" speakers.

[21]Personal interview, December 17, 2019.

from Santa Ana, 5 from Matatlán, and 8 from Macuilxochil); three speakers of Chatino from San Miguel Panitxtlahuaca; two Mixe speakers from Tlahuitoltepec and Puxmetacán; one Chontal speaker; and one Chinantec speaker.[22] The remaining students are monolingual Spanish speakers.

Students at BIC are exposed to four hours per week of English instruction, as well as two hours per week of Indigenous language study. All students—whether they are speakers of an Indigenous language or not—participate in these classes. The diversity of the student body presents a challenge for teaching Indigenous languages, as Maestro Lorenzo aims to work with all of the languages represented in the classroom, in accordance with the *Ley General de Derechos Lingüísticos de los Pueblos Indígenas* (2003). As a result, classes have focused on basic vocabulary including numbers and greetings, as well as comparative examination of different semantic fields across the languages. Using this content, Maestro Lorenzo has attempted to teach at a level that is interesting for Indigenous languages speakers—who can serve as 'experts' and help their classmates—but also accessible for those who have not learned any Indigenous language yet. Maestro Lorenzo, like Maestra América and Maestro Zeferino, noted that in his class, the focus has always been on speaking.

Through BIC, students have been able to carry out a diversity of projects. Maestro Lorenzo reported that each semester, there is some type of final project. Examples include the creation of an anthology about medicinal plants, traditional music, and myths written in Zapotec, as well as the creation of a map of the linguistic diversity of students in the class (see figure 4.1). In these projects, monolingual Spanish speakers have been asked to research the topic while Zapotec speakers participate mostly through writing and recording narration of the content in Zapotec.

In addition, students at BIC have frequently participated in recording spots for local radio stations, often in collaboration with governmental committees within the community. In most cases, students themselves have actually recorded the spots, but in other cases, they have provided the script for others to read. Furthermore, Maestro Lorenzo has assisted students in preparing for different expositions, both in Teotitlán and Oaxaca City. Students have presented poems at the festival hosted on International Mother Language Day, and stories at a Mother's Day celebration and the Oaxaca Book Fair. Some young women from the BIC have competed in the *Diosa Centeotl* competition, explaining their traditions and wearing traditional clothes as part of Oaxaca's annual *Guelaguetza* celebration in July.

As mentioned previously, BIC has also collaborated with the preschool in creating didactic activities for the students there. These activities included games like bingo, concentration, snakes & ladders, and dominoes. In addition, they provided guides to the names of body parts and the costume worn by traditional dancers known as 'danzantes.'

[22]I did not clarify with Maestro Lorenzo what he meant when he reported these students as 'speakers' of their respective languages. Defining 'speakerhood' is a difficult and problematic undertaking (Hill 2002, Leonard 2008, Moore 2010, Perley 2012, Boltokova 2017), and analyzing the unique language abilities of multilingual, multicultural high school students from outside of Teotitlán falls outside of the scope of this study.

Figure 4.1: Map of languages represented at BIC

With the potential for an even wider effect, students and staff in the language program have been working together with students and staff in the computation program at BIC to develop a language-learning app for Zapotec which requires knowledge in both Zapotec and programming to create. The prototype (which I was shown at the time of the interview in December, 2019) involved words appearing on the app which show the writing of the word and play an audio recording of a student saying the word aloud. Overall, the program at BIC seems to mirror many of the goals of other programs, in that it has sought not only to teach the language (with a focus on orality), but to increase the value that young people assign to it.

Summary of initiatives in schools. Overall, it is exciting to see that there are initiatives promoting the Zapotec language in four out of the five public schools in Teotitlán del Valle. Furthermore, it seems that these diverse programs share some similar objectives and challenges. For one, most of the initiatives involved the importance of honoring orality rather than relying heavily on written materials. Many educators mentioned that this is

especially important in a community that is as linguistically diverse at Teotitlán, and for a language that does not yet have a widely accepted orthography. By focusing on oral language teaching and learning, educators can sidestep the political issue of orthographies, while also respecting the way in which Zapotec has traditionally been taught and used rather than relying on a Western construction of language learning that requires reading and writing.

At the same time, in learning more about these programs, it also became apparent that they face similar challenges, including pushback from parents,[23] a lack of time and funding for Zapotec language instruction, and the difficulties posed by teaching a class of students with different linguistic backgrounds and Zapotec language abilities. It is important to note, moreover, that while there have been language initiatives in the preschool and high school for several years (the high school programs, for example, begain in 2009), the elementary and middle school initiatives are new (both beginning only in 2019). Furthermore, at the elementary level, students in the morning school do not have access to Zapotec classes. Thus, it appears that elementary school students continue to be underserved by language revitalization initiatives, despite the progress that has been made. It is for this reason, among others, that I chose to focus the summer language workshops on students of elementary school age.

4.2.3 Community initiatives

Beyond the initiatives outlined in section 4.2.2, there are a variety of other programs and initiatives that have been undertaken at the community level in Teotitlán. I use the term 'community level' to indicate that these programs are designed to serve all Teotitecos who are interested in participating in the program or service. Unlike the school-based initiatives, which target students at particular grade levels, these community initiatives seek to serve any Teotitecos who are interested in participating, from children to adults. Furthermore, I distinguish these programs from the school-based initiatives as they are not governed by the same set of restrictions as programs hosted through the public school system. At the same time, I also distinguish them from what I term 'broader initiatives' that involve greater collaboration with people who are not from Teotitlán and are not working there full time (as is the case for teachers in the community). While some individuals from outside Teotitlán have participated in community initiatives, these programs are primarily advertised to residents of Teotitlán, rather than to people from other areas. These 'community initiatives' have included the formation of a community language committee, the creation of a cultural center in town,[24] and the implementation of Zapotec language classes in Teotitlán.

Language committee. In 2015, a group of between twenty and thirty community members in Teotitlán came together and formed *didxih baa xteh gulas* (roughly translated as 'Sacred word of the Zapotecs'). This group received recognition from the municipal

[23]Parents' attitudes towards Zapotec language learning will be explored further in chapter 6.

[24]The cultural center may be arguably advertised to people outside of Teotitlán as well, as it also serves as a tourist destination. However, it also hosts courses that are designed for and carried out by residents of Teotitlán, so I consider it to be a community initiative.

government and was allowed to begin meeting in public spaces to work on language promotion activities. I joined the group shortly after its creation in January 2016, when I was invited by Sergio Martínez. At that time, the group was collaborating with the *Centro de Estudios y Desarrollo de las Lenguas Indígenas de Oaxaca* (CEDELIO) to develop a community orthography proposal. In January 2016, I attended several group meetings and assisted participants in identifying the contrastive sounds of TdVZ, as well as explaining (to the best of my abilities) the consequences of choosing to represent sounds in different ways. From January through April, I remained in touch with the group through our WhatsApp feed; participants frequently sent me sound files and proposed transcriptions of TdVZ words and I provided feedback on their orthographic proposals.

In April 2016, I returned to Oaxaca for a short visit, during which time the community orthography proposal was presented at a public library in Oaxaca City to an audience of individuals from Teotitlán, language activists, and linguists. This presentation was scheduled to coincide with the *Coloquio de Lenguas Otomangues y Vecinas* (COLOV) linguistics conference happening during the same weekend in Oaxaca. The goal of the presentation was to showcase contrastive sounds, proposed graphemes for each sound, and example words beginning with those sounds that had been identified by the committee. Committee members commented that they hoped that this presentation would provide a starting point for further conversation about orthographic norms for TdVZ.[25]

Following the orthography proposal, the committee continued to collaborate with CEDELIO, this time on a 'paisaje lingüístico' (linguistic landscape) project. This project involved identifying landmarks and places of interest around Teotitlán, determining their name in Zapotec, Spanish, and English, and creating roadsigns pointing them out (mostly for tourists). An example of the final product can be seen in figure 4.2.

After the completion of the paisaje lingüístico project in 2016, the committee had a difficult time deciding on a specific project to undertake, and CEDELIO indicated that they would be happy to collaborate again in the future, but only if a specific project were identified. The committee continued to meet from time to time, working on compiling a list of words in their proposed orthography as well as recovering words that had been replaced by Spanish borrowings. In order to achieve this second goal, members would ask community elders, talk amongst themselves, and consult Juan de Córdova's Colonial Valley Zapotec dictionary (de Cordova, 2012). Without a tangible goal, however, group meetings were less attended and less frequent, and by 2019 the group had in effect been replaced by Zapotec language classes taught by Don Adrián and Sr. Faustino (discussed in detail below).

Cultural center. In 2018, a new cultural center, the *Centro Cultural Comunitario de Teotitlán del Valle*, was opened under the directorship of Abigail Mendoza Ruíz.[26] At the

[25]It is important to note that this is not the only orthography proposed for TdVZ. Maestro Zeferino uses another orthography (which can be seen in the signage presented in the Cultural Center), and Harrison et al. (2019) note that in the development of the TdVZ talking dictionary (Lillehaugen et al., 2019), speakers' orthographic preferences are honored because there is not yet a standardized orthography that everyone agrees to use.

[26]Personal interview, December 20, 2019. The cultural center was built by the municipality of Teotitlán,

Figure 4.2: *Paisaje Lingüístico* project street sign posted at the main intersection in Teotitlán, showing *Dain Giæ Bætz* (Pichacho Mountain), *Lou La'a* (Oaxaca City), and *Yu'lai* (Municipal Center).

center's inauguration, Maestro Zeferino presented a speech in Zapotec. The cultural center has a museum of Zapotec cultural traditions and practices, such as weaving, candle making, weddings, and the 'usos y costumbres'[27] government system. All text presented in this museum space is presented trilingually in Zapotec, Spanish, and English, with Zapotec text produced by Maestro Zeferino and Domingo Gutiérrez (figure 4.3).

Furthermore, there are meeting rooms that are available for cultural groups to use, including groups of Zapotec learners. Since then, the community language committee has used

with funding from *Ramo 23* and the Secretary of Tourism at both the state and federal level (Jiménez, 2018b).

[27]This translates literally to 'uses and customs' and is a system of government under which communities can follow local practices for choosing leaders and carrying out local governance. While such practices have been carried out for hundreds of years, they were legally recognized by the federal government in 1995 (Knight, 2018).

Figure 4.3: Trilingual sign from the *Centro Cultural Comunitario* exemplifying the trilingual nature of the displays in Spanish, Zapotec, and English.

the space for their class meetings. Zapotec classes were being hosted by Don Adrián and Sr. Faustino on Saturdays from 5:00-6:00pm, open to all. I was able to attend several of these sessions and observed that they were attended by both children and adults from within the community, as well as several adults from neighboring towns. Unfortunately, attendance at these meetings also decreased over time. Director Abigail commented on the difficulty of finding teachers for the courses, especially given that the classes are entirely voluntary and free. As of December 2019, the classes were no longer being held, but Director Abigail commented that she hoped to start offering classes again in the upcoming year.

In December 2019, the space was used for the Zapotec language workshop. The class met several times in the classroom space, and Rosita and I also carried out two activities using the trilingual museum displays. In one activity, students had to find the steps required for weaving a rug, use the trilingual text to translate these steps from Spanish into Zapotec, and put them in order. Then, students each narrated the step while I filmed an area of the museum that they indicated. In another activity, students had to complete a scavenger hunt for Zapotec words throughout the museum. I provided a list of Spanish words and students

had to search for their Zapotec equivalents based on the trilingual text. These activities utilized only a fraction of the materials available at the cultural center, and the potential for greater use of the space is certainly present.

Language classes. In addition to the language committee and the cultural center, there have been two distinct Zapotec language courses that I am aware of that have been offered in Teotitlán targeted towards individuals living in Teotitlán.

As mentioned in the previous section, Don Adrián and Sr. Faustino of the community language committee have offered free Zapotec classes for one hour on Saturday afternoons. These classes were open to any interested parties. During my time attending the classes, I observed that most activities involved vocabulary learning driven by semantic domain. Classes often revolved around naming words related to a particular topic—animals, body parts, foods, etc.—and sometimes putting these words into sentences like 'The cat is big' or 'I eat tortillas.'

In summer 2017, another language course was offered by Maestro Zeferino. The course was sponsored by a variety of agencies, including the *Centro de las Artes de San Agustín* (CaSa), artist Francisco Toledo, and then-President of Teotitlán Pantaleon Ruíz Martínez. This course, titled 'Los Caminos de la Serpiente', involved 22 hours of Zapotec instruction. During the course, which I completed, students learned about the Zapotec language as well as its history. Most of the students were adult Zapotec speakers from Teotitltán, though some were children or passive speakers. As part of the course, students were given several publications that had been created in Zapotec by Francisco Toledo (discussed in greater detail in section 4.2.4). Unfortunately, despite its popular reception in Teotitlán, this course was not repeated or hosted again between 2017 and 2020, though in December 2020, Maestro Zeferino began hosting Zapotec classes via Zoom during the COVID-19 pandemic.[28]

4.2.4 Broader initiatives

In addition to initiatives that are run mostly by Teotitecos, taking place in Teotitlán del Valle, with Teotitecos as the target audience, there are also projects that are targeted for a potentially wider audience, as part of larger, pro-Indigenous movements. I detail several such projects here, including Zapotec language courses hosted in Oaxaca City, support for creating language materials from artist Francisco Toledo, the creation of a pedagogical grammar through the *Taller de Gramáticas Pedagógicas de Lenguas Otomangues*, US-based academic projects, and broad movements for valorizing Indigenous languages.

Courses in Oaxaca City. There have been several opportunities to study TdVZ in Oaxaca City. One program was offered through the *Biblioteca de Investigación Juan de Córdova*, taught by Maestra Janet Chávez Santiago, a speaker of TdVZ. She designed and

[28]I was able to attend several of these classes and saw that there were attendees from Teotitlán as well as other areas in Oaxaca and the US, including individuals who were part of the Zapotec diaspora and who were not Zapotec but had an interest in learning the language. The fact that these classes were delivered remotely makes it difficult to categorize them as targeted for the community 'in' Teotitlán or more broadly.

implemented a course called *Te ganiun dixza xte' Xigie* (Miller, 2019).[29] I had the pleasure of taking two semesters of the course in 2014. The class was composed of a variety of students from Oaxaca City, others parts of Mexico, and abroad. While some students were aspiring professionals, such as doctors, nurses, and lawyers, who hoped to one day be able to speak in Zapotec with future clients, many (myself included) were simply interested in learning about the language. In my experience as a student in the course, interacting with the language—and its speakers—in such a close way resulted in a deeper understanding and respect not only for the language, but also for its speakers. This personal experience is in line both with the course's goals and with findings of other studies (such as McCarty 2011) that have shown that through learning an Indigenous language, learners who are not part of the ethnic group whose language they are learning gain a greater appreciation and tolerance for members of that group. Thus, this initiative not only addresses language learning itself, but also language revalorization and respect for Zapotec speakers and community members.

The course covered various conversational topics in Zapotec, beginning with greetings and introductions, continuing through basic words and phrases (numbers, colors, days of the week), to daily activities, and how to purchase things in the market. Grammatical constructions were the focus of some lessons, including habitual, continuous, and past tense/aspects, as well as ways of marking possession. Students learned one particular system of writing Zapotec,[30] but also gained skills in spoken Zapotec. They participated in visits to Teotitlán to practice their conversational skills in context, both buying things in the market of Teotitlán and finding conversational Zapotec partners who were studying Zapotec at the BIC.[31] After two semesters, I left the course with basic conversational ability in Zapotec.

In addition to the classes offered through the *Biblioteca de Investigación Juan de Córdova*, classes are also offered through the private language school *Casa de Lenguas Oaxaca*, alongside English, French, German, and Italian. These courses are taught by Maestro Zeferino, who offers both group classes and private lessons. He commented that most of his clients are either business-people interested in directly interacting with Zapotec-speaking vendors, or academics studying some aspect of Zapotec culture.

Support from Francisco Toledo. Another effort for the promotion of Zapotec languages is sponsored by a Zapotec artist from Juchitán de Zaragoza, Francisco Toledo.[32] Toledo created a publishing house known as *La Maquinucha Ediciones* which prints mostly work created through his workshop *El Alacrán*, which has the mission of teaching and preserving Indigenous languages (Jiménez, 2018a). Toledo commented that Inari Resendiz, director of Toledo's *Instituto de Artes Gráficas de Oaxaca* (IAGO), was behind the establishment of the project, and as of 2018, over 200 designs had been printed. One such project

[29]The *Biblioteca de Investigación Juan de Córdova* has also offered other language courses, including other Mexican languages like Mixe and a Mexican variety of Romani as well as larger languages like Chinese.

[30]In a conversation with Maestra Janet on December 23, 2019, she remarked that there have been a number of updates to the orthography used during the courses that I attended, but the materials have not yet been entirely updated.

[31]See 4.2.2 for more information about Zapotec language activities at the BIC.

[32]Unfortunately, Toledo passed away on September 5, 2019 at the age of 79.

was the translation of several of Aesop's fables into several varieties from throughout family of Zapotecan languages—Isthmus, (Western Tlacolula) Valley, Northern Sierra, and Southern Sierra Zapotec,[33] and later into Mixe, Mixtec, and Huave (Jiménez, 2018a). A book naming body parts in Zapotec has also been produced in several languages,[34] and a game of bingo is being created.

In an interview published in 2017, Resendiz commented on the three main lines of work that are covered by *La Maquinucha*. First, the printing press is dedicated to creating low-cost didactic materials that "refuercen y contribuyan a la permanencia de una identidad local...de forma gratuita en escuelas primarias y comunidades cercanas"[35] (Gutiérrez, 2017). Second, the organization is committed to distributing these materials at low or no cost. Third, individuals who are creating products that are in line with the mission of *La Maquinucha* are invited to collaborate and use the organization as a venue for printing their products, again, at a low cost. These efforts by Toledo and his associates represent an effort to promote TdVZ as part of a larger movement for Indigenous language appreciation and the maintenance of local culture within the diverse state of Oaxaca.

Pedagogical grammar. Additionally, several language activists from Teotitlán have been working on a pedagogical grammar of the language through participation in the *Taller de Gramáticas Pedagógicas de Lenguas Otomangues* that was hosted through the *Biblioteca de Investigación Juan de Córdova.* These workshops were hosted over the course of three years in one to two-week summer sessions beginning in 2015. During the workshops, linguists from various universities worked with attendees to teach concepts related to writing a pedagogical grammar as well as technical linguistic aspects that should be taken into account. The result of this work in the case of Zapotec is that there was (as of December 2019) a draft of a ten-unit pedagogical grammar written by Maestro Zeferino. I categorize this effort as being part of a larger movement for Indigenous language rights in Mexico due to the importance of collaboration with academics and experts from outside of Teotitlán and the fact that participants in the pedagogical grammar workshops collaborated with language activists from a variety of Indigenous languages of Mexico. While the textbook was not yet in circulation as of December 2019, it nevertheless represents a significant amount of progress towards a final, published product.

Movements for the appreciation of Indigenous languages which affect Zapotec. The *Biblioteca de Investigación Juan de Córdova*, where Maestra Janet was the director of education from August 2011 to January 2017, also hosted a project called *todas se llaman lenguas* ('they are all called languages') (*Todas se llaman lenguas*, n.d.) which has promoted the equality of all languages, particularly the languages of Oaxaca, since its foundation in 2013. The main issue that this initiative targeted was the general misunderstanding that the Indigenous languages of Mexico are 'dialects' rather than 'languages.' The term 'dialect' has gained a negative connotation, and thus by using the term 'dialect' to describe Indigenous

[33]The TdVZ version was written by Janet Chávez Santiago.

[34]The TdVZ version was written by Zeferino Mendoza Bautista

[35]"...reinforce and contribute to the permanence of a local identity...in order to distribute them in elementary schools and nearby communities"

languages, many are led to believe that Indigenous languages are somehow incomplete or have less structure and expressiveness than languages like Spanish. The *todas se llaman lenguas* project sought to correct this misunderstanding, and to do so has supported several initiatives, including the production of various free promotional materials (figure 4.4) and the development of a website explaining how Indigenous languages are not simply dialects.[36] This effort was complemented by the offering of classes in diverse languages such as Mixe, Zapotec, and Chinese through the library, the purpose of which was not only to teach those respective languages, but to illustrate that Indigenous languages are languages on par with any other global language (*Todas se llaman lenguas*, n.d.).

Another effort to promote Zapotec more widely, led collaboratively by Professor Brook Lillehaugen, Dr. Felipe H. Lopez, Moisés García Guzmán, and Abisai Aparicio, was a movement to use Zapotec on Twitter with the hashtag '#usatuvoz' (Lillehaugen, 2016). Under the project *Voces del Valle*, speakers of Zapotec and Chatino were encouraged to write their languages using Twitter. As part of the project, Zapotec high school students in Tlacolula de Matamoros, Oaxaca were paired with a specific 'reader' who shared at least one language in common with the writer. The writer was tasked with tweeting 10 times per week and the reader was tasked with reading, retweeting, and adding context (through translation, hashtags, etc.) (p. 360). Though the goal of tweeting 10 times per week was not met, participants nevertheless created an online presence of Zapotec writing that persists to the current day.[37]

This, however, is by no means the only digital activism that relates to Zapotec promotion. The *Biblioteca de Investigación Juan de Córdova* has hosted a variety of workshops and talks on digital activism for Indigenous languages. Furthermore, Rising Voices hosts a Twitter account @ActLenguas (Language Activism) which also promotes Indigenous languages; recently, it has been managed by Valley Zapotec speakers Felipe H. López (of San Lucas Quiaviní) and Maestra Janet (of Teotitlán). This is part of a larger project forming a network of digital activists for Indigenous languages in Latin America (*Lenguas Indígenas: Una Red de Activistas Digitales en América Latina*, n.d.). Similarly, Yolanda del Carmen Duarte Ruiz has started a project collecting stories in Indigenous languages of Latin America and hosting them on her website, `cantacaminos.com`. This website includes a story in TdVZ narrated by Don Lorenzo Justiniano and adapted by Maestro Zeferino (Duarte, n.d.).

Academic projects based in the US. One final type of language activism work that I would like to highlight is more traditional linguistic and anthropological work that is being done by scholars based at academic institutions. While such work has a variety of applicable outputs, what has been most tangible for TdVZ language revitalization so far are the two dictionaries that have been produced and are available online.

One dictionary was created by Troi Carleton and Serafin Martinez Gonzalez and can be found at `zapoteco-teotitlan.webonary.org` (Carleton & Martinez Gonzalez, n.d.). The website reports that there are 2197 Zapotec words in the dictionary, which was last updated

[36] At the time of writing, the website has unfortunately been down.

[37] Just check '#usatuvoz' to see what is out there.

Figure 4.4: Promotional material from the *todas se llaman lenguas* campaign (*Todas se llaman lenguas*, n.d.). The text at the top names Indigenous languages of Mexico (Zapotec, Mixtec, Triqui, etc.) alongside more globally recognized languages (Armenian, Polish, English, etc.) before posing the question, 'Dialects? Languages?' and the answer 'All are called languages.'

in 2015. A pdf version of the dictionary is available for download, or entries can be searched online; some contain sound files of a speaker pronouncing the word. In addition, there are several transcribed and translated texts available on the website. Personally, I have found the pdf dictionary to be very useful on occasions when there is no internet access while teaching TdVZ.

Another project is the Teotitlán del Valle Zapotec online talking dictionary (available at `talkingdictionary.swarthmore.edu/teotitlan`) (Lillehaugen et al. 2019, Harrison et al. 2019). The online dictionary had 2279 entries, along with 2053 audio files and 675 images as of June 2021. Like the Carleton and Martinez Gonzalez (n.d.) dictionary, each entry is trilingual, but most entries in the talking dictionary have an audio file associated with them, and some also have images (original photos, stock photos, original artwork, or stock artwork). At one point, there was an app available to download and use the dictionary while not connected to the internet, but unfortunately that program requires maintenance to get up and running again. Nevertheless, the TdVZ talking dictionary online continues to grow through collaboration among linguists, speakers, and students, among others, as speakers record new words to add to the database. This dictionary honors the diversity of TdVZ by presenting multiple entries for each word if they are recorded by multiple speakers. Each speaker is credited for their recording, and differences in pronunciation and spelling are also represented. This is similar to many of the previously mentioned projects which also focus on speaking and listening over reading and writing the language (see Lillehaugen 2016, Harrison et al. 2019 for further discussion of writing choices).

The review of initiatives I present here is necessarily limited—there are a variety of other means of promoting Zapotec at a wider level. However, the projects mentioned here are the ones that I have been most exposed to during my time working on TdVZ, and whose impacts I have felt most strongly within the community in Teotitlán.

4.3 Situating Zapotec language workshops within a typology of language revitalization

Given the vibrant community of language activists working to promote Zapotec in Teotitlán, it is useful to ask why those of us involved in the Zapotec language workshops for kids—particularly Rosita and I—have decided to implement this initiative over any other. In the following subsections, I outline—following the theoretical framing proposed in chapter 3—the key factors that led me to build this project, in collaboration with many community members in Teotitlán (most notably Licenciada Rosita Jiménez Lorenzo, who I introduce in section 4.4.2), and why it has emerged in the form that it has. I focus on what I have termed 'background factors' in chapter 3 in this section; emergent factors are briefly addressed, but expanded upon elsewhere. Unless cited otherwise, observations are taken from my own

experiences.[38] References to 'we' refer to Rosita and I unless otherwise specified.

Population Teotitlán del Valle Zapotec (TdVZ) is a member of the Zapotecan family of languages. It is a variety of Western Tlacolula Valley Zapotec (Simons & Fennig, 2017), within the Central Core Zapotec family. There are many closely related varieties spoken in the Tlacolula Valley of Oaxaca in southern Mexico. As of 1990, there were approximately 28,500 speakers of Western Tlacolula Valley Zapotec (Simons & Fennig, 2017). However, TdVZ is only one of a number of varieties subsumed by the label 'Western Tlacolula Valley Zapotec'; there are approximately 4,000 speakers of TdVZ[39] out of a population of approximately 6,400 (INEGI, 2020).

Regional factors Oaxaca state is one of the most linguistically diverse areas in the Americas, and is home to 16 Indigenous language groupings, including Zapotec (Yahalom, 2016). Spanish missionaries first arrived in what is now Oaxaca City in the early 1500s. Many missionaries focused on using Indigenous languages as a medium of communication for conversion, and in 1578 Fray Juan de Córdova published an important dictionary and grammar of Zapotec as it was spoken in the Valley (de Cordova, 2012).[40] In more recent history, the state has been characterized by political activism led by teachers (Meyer, 2018).

Linguistic factors In the Tlacolula Valley, there are a number of Zapotecan languages spoken; they are not all mutually intelligible. Zapotecan languages are tonal and verb-initial, and they contain a number of phonemes not present in Spanish. In addition to tone, vowels contrast for a number of phonation types, making the phonology of the language particularly difficult for L2 speakers to master. At the same time, the similarity that TdVZ shares with neighboring varieties makes work done on those varieties highly useful. Furthermore, access to over 400 years of documentation on Valley Zapotec provides a resource that is not available in many other language endangerment contexts, and it is particularly useful in terms of recovering words that have become supplanted by Spanish loans over that time period. Several orthographies have been proposed for TdVZ and other Zapotecan languages (Harrison et al., 2019; Lillehaugen, 2016), but there is not a universally accepted standardized orthography in use for TdVZ. However, writing in Zapotec can be found throughout town and in various written resources (including those mentioned in section 4.2) and written communication is often (though not always) maintained even with the presence of orthographic variation (see Lillehaugen 2016 for a description of similar phenomena).

[38] I conducted research in Teotitlán in January—March 2012, lived in Oaxaca City (visiting Teotitlán periodically) from September 2012—April 2015, and returned for research trips totaling approximately 40 weeks spread out over January 2016, May—August 2016, January 2017, May—August 2017, July—August 2018, January 2018, July—August 2019, and December 2019.

[39] I say "approximately" as the census data does not specify which Indigenous language is spoken by residents. While some individuals are speakers of Indigenous languages other than TdVZ, the majority of Indigenous language speakers in Teotitlán (based on my experience) are TdVZ speakers.

[40] There are multiple varieties of Zapotec spoken in the Valley, and it is likely that Córdova relied on multiple varieties from the Valley as well as possibly other varieties in compiling his dictionary (Rendón Monzón, 1969). The record available of Colonial Valley Zapotec—including Códova's work—is believed to represent multiple varieties (Broadwell & Lillehaugen, 2013). Rendón Monzón (1969), however, suggests that TdVZ is the most similar phonologically to the representations in de Cordova (2012).

Political & institutional factors Mexico officially acknowledges and gives legal status to the Indigenous languages found within its borders (as described in section 4.2.1) and has developed several institutions to support Indigenous language use and revitalization, including the *Instituto Nacional de Lenguas Indígenas* (INALI) at the national level and the *Centro de Estudios y Desarrollo de las Lenguas Indígenas de Oaxaca* (CEDELIO) at the state level. Teotitlán del Valle is an Indigenous community governed by 'usos y costumbres,' meaning that it follows a self-defined system of government (Yahalom, 2016).[41] Community members are expected, and at times required, to participate in community governance and development through a system of 'cargos' (appointments to positions including police officer, member of a committee in charge of a town service like drainage, and Municipal President, among others, that selected individuals are assigned to carry out without remuneration on a rotating basis) and 'tequio' (community labor). As governments change, the way that Indigenous language is supported or hindered can also change. As noted in section 4.2.2, there is some level of institutional support at four of the five local schools, but these programs do not yet meet the federal mandate laid out in the *Ley General de Derechos Lingüísticos de los Pueblos Indígenas* (2003).

Social & ideological factors Today, there is fairly widespread support of Zapotec language revitalization within the community, as older speakers and parents are realizing that the language is not being passed down to many children. As many individuals reported in interviews and conversations with me, one to two generations ago, monolingual Zapotec-speaking children were expected to use only Spanish in school; if students used any Zapotec, they were physically and emotionally punished. As a result, many parents spoke in Spanish with their children in an effort to prepare them for school and save them this abuse. This led to an increase in the number of individuals in Teotitlán who do not speak (much) Zapotec. This includes some parents who do not speak Zapotec, and thus have realized that they need additional support to pass the language on to their children. It also includes parents who are Zapotec speakers themselves but have used Spanish at home and are concerned that their children are growing up with only monolingual Spanish skills. At the same time, the language is still a crucial part of community life. Community meetings are conducted largely in Zapotec, as are important celebrations (including patron saint celebrations, weddings, and baptisms). Individuals who are not speakers of Zapotec have expressed feelings of being left out during these types of important events.

Economic factors Teotitlán is home to a vibrant economy that includes agriculture, weaving, and tourism, among other things. Although Oaxaca is the second-poorest state in Mexico, and 82% of the population of Teotitlán is considered to be in poverty according to national standards (Yahalom, 2016), Teotitlán is relatively wealthy in comparison to many other towns in the area. Many community members participate in the economy of weaving and selling woven goods (particularly rugs), or are active in the growing tourism industry. Given that Teotitlán is only a 40 minute bus ride from Oaxaca City, it has become an

[41] Within the municipality, the choice of governing system is locally determined, following the 1995 law described in section 4.2.1 (Knight, 2018).

increasingly popular destination for national and international tourists.

Temporal factors Teotitlán has been experiencing colonial suppression since the arrival of the Spanish in the 1500s, but only recently has language use shifted heavily towards Spanish. Some community members have commented on the effects of the arrival of the highway in the 1960s and the resulting ease of travel between Oaxaca City and Teotitlán, which has led to changes in the town economy and the level of contact with people from outside Teotitlán. While members of the grandparent generation often comment that when they went to school, students were mostly monolingual in Zapotec, students are mostly monolingual in Spanish in 2021.

Resources The main resources available for Zapotec language revitalization are human resources. The program I ultimately proposed has the support of the municipal government, as well as parents, teachers, myself (a linguist studying at UC Berkeley, with the privileges and benefits, such as institutional support and funding, that such a position brings), and the librarians in the public library of Teotitlán. The municipal government has allowed us the use of their meeting space, as has the library,[42] and (as of December 2019) the cultural center. The presence of a large number of Zapotec speakers in Teotitlán is an immense resource, as these individuals can become involved in programming and give participants a chance to hear and use the language. Furthermore, even though conversations continue surrounding possible standardized orthographies, a few books have been published, though they appear to be targeted more towards adults than children.[43] There are some documentary materials for the language, including two dictionaries (Carleton and Martinez Gonzalez n.d.; Lillehaugen et al. 2019), linguistic analyses (Deal & Nee, 2017; Gutiérrez Lorenzo, 2012; Kalivoda & Zyman, 2015; Nee, 2018; Uchihara & Gutierrez, 2019; Uchihara & Gutiérrez, 2020), and my own documentary corpus.

Goals The main goal of the Zapotec language workshop is to ensure sustainable Zapotec transmission over time. As part of this, we have a goal of getting kids excited about learning and using the Zapotec language and shifting them away from any negative ideologies that they may have about the language. Another goal is to connect learners with contexts to interact with speakers in the language in ways that can be replicated throughout the year, not only during the short workshops. In addition, we seek to build the abilities and confidence of learners through a communication-based methodology in the classroom paired with realistic interactions with Zapotec speakers during field trips around town, some of which feature

[42]The library consists of two floors, which are open to the public Monday through Friday from 10-2 and 4-8. Both floors have books that can be checked out. There are also a set of computers that are (periodically) available for use depending on whether they are being maintained. Given that the library is understaffed, it is very difficult for the librarian to keep the books organized, attend to patrons, and also monitor computer use. As a result, computers are often infected by viruses or otherwise damaged by users.

[43]At present, Maestra Janet is making more child-friendly books, which she is publishing online at `storyweaver.org.in`. I have also collaborated with several undergraduate students at the University of California, Berkeley and with Zapotec speakers in Teotitlán to produce children's books in the language. One of these books has been published digitally and is available for download (Lazo Martínez et al., 2020) and is discussed in greater detail in section 3.5.1.

community-building aspects that aim to foster a supportive learning environment and sense of belonging. These goals are further explored in section 4.5.

Target population The workshop is targeted towards kids ages 5-12, though no one is turned away from the workshop, and children as young as 4 and as old as 16 have participated. On average, we have had approximately 20 students per workshop, though more details are discussed in section 4.4.1.

Timeframe of implementation The first workshop was held in summer 2016 (hosted by Professor Kalinka Velasco Zárate). In summer 2017, a 16-hour workshop was held (every other day), followed by a 20-hour workshop in summer 2018, a 22-hour workshop in January 2019, a 30+ hour workshop in summer 2019, and a 20-hour workshop in December 2019. Each day of the workshop was held as a two-hour session (with the exception of several field trips, such as one 4-hour class in January 2019 that involved a hike to the top of an important mountain in town and one day-long class in summer 2019 that involved a visit to Monte Albán, which is a UNESCO world heritage site and former capital of the Zapotec empire). With the exception of summer 2017, workshops were held daily, Monday through Friday, plus occasional weekend day trips. In January and December 2019, classes were held in both a morning and an afternoon session to accommodate students' school schedules.

Methods Classes involved both a classroom component and interaction with Zapotec speakers in the community. The classroom components were developed around a framework of communication-based instruction (Supahan & Supahan, 2001) where students were exposed to comprehensible input, allowed to practice with the teacher's guidance, then independently, all with some type of communicative goal in mind. For example, one class was based around the communicative goal of finding the prices of fruits and vegetables in the market, and another focused on explaining the process of creating a woven rug. The classroom-based instruction was paired with trips around town to places where these communicative acts could be carried out. For example, students went to the market and completed a scavenger hunt finding the prices of different fruits and vegetables, and they went to the home of a master weaver and interviewed him about the process of weaving. These interactions with Zapotec speakers were considered the 'evaluation' component, as opposed to more formal testing, as the ultimate goal was to encourage students' use of the language, not discourage them because of an aversion to testing or a sense of failure derived from any testing outcome.

Outcomes Students and their parents reacted positively to the workshops, asking for workshops to be offered more frequently and for longer periods of time. Some students were able to successfully learn and use some of the target vocabulary and phrases during interactions with Zapotec speakers, though others did not learn the target language. Nevertheless, students did create their own learning materials through the class, and some of these materials are available for use in the library while students brought others home with them. Furthermore, several parents reported a change in their children's attitudes towards the Zapotec language, noting that their children were using more Zapotec and home and asking more questions about how different things are said in the language. This indicates some degree of success in the main goal of motivating learners to continue working on the

language and to develop positive ideologies regarding the Zapotec language. For a full report of outcomes, see chapter 6.

4.4 Participants

As a result of the background factors described above, those of us involved in the project decided that the target audience for this program would elementary school aged children in Teotitlán del Valle, to be taught by speakers of TdVZ, with my assistance in organizing events and suggesting ways to enhance student learning outcomes. In this section, I provide more demographic information on the students, teachers, and speakers who have participated in the project to date.

4.4.1 Students

Overall, 77 individual students have attended the Zapotec language workshops. Of these students, 24 have attended more than one workshop, with an average of 1.62 workshops attended. Over time, student enrollment and retention have both increased, with the exception of December 2019 which saw a fall in both (see table 4.1). Many students and parents commented to me that the dates of the December 2019 workshop were difficult because of school, religious, and personal commitments that students had at that time, which may account for this decline.[44] Table 4.1 also shows the retention of students from one workshop to the next, as well as overall retention. There were three students who have attended all three summer workshops, but did not attend the January 2019 workshop, as well as one student who attended both winter workshops but not the intervening summer workshop. These patterns may be related to availability rather than interest in the Zapotec language workshops.

I have advertised the workshops as being for students ages 5-12 in an attempt to target the elementary school-aged children, but as is shown in table 4.1, some students as young as 4 and as old as 16 have also attended. It is my policy not to turn away any participants, though for some of the younger children, I did ask that an older sibling or other guardian stay with them to ensure their safety (especially during field trips).

Interestingly, of 44 students who reported whether or not their parents speak Zapotec, 32 said 'yes', 9 said that one parent spoke Zapotec, and only 3 reported neither parent speaking Zapotec.[45] These numbers, unfortunately, do not paint the whole picture, as some households include other adults (grandparents, aunts, uncles, etc.) who may or may not

[44]I had previously hosted a winter workshop in January 2019 rather than December 2018, as it seemed that the December vacation period was full of activities for the kids. However, some parents recommended that I come during December in 2019; I followed the recommendation, but it seems that indeed January is a better time for kids to attend the workshops, which I will take into account in the future.

[45]It is not clear to me of the 'yes' responses how many represent households with two Zapotec-speaking parents versus single-parent households where the single parent is a Zapotec speaker; I did not want to cause discomfort to the students by probing this issue.

workshop	No. of students	Attended next workshop	Attended subsequent workshop	Median age	Youngest	Oldest
Summer 2017	22	4	4	8.5	5	12
Summer 2018	25	9	12	8	5	16
January 2019	27	19	20	11	6	15
Summer 2019	34	15	15	9.5	4	15
December 2019	19	N/A	N/A	9	6	12

Table 4.1: Enrollment, retention, and student age at Zapotec workshops.

speak Zapotec. In one family, for example, where the children accurately reported that both of their parents speak Zapotec, one of their grandparents—with whom they also live—is a monolingual Spanish speaker. As a result, Spanish is very frequently used in the household and Zapotec is rarely heard. Furthermore, the vast majority of students are born and raised in Teotitlán, though at least one student is a Teotiteco who was raised outside of Teotitlán, elsewhere in Mexico. Thus, most students are exposed to Zapotec at the very least around town. Unfortunately, I do not have comprehensive data on where all students have lived, though more details about the students' language use can be found in chapters 2 (reported language use) and 5 (observed language use).

4.4.2 Teachers and speakers

I hosted workshops in summer 2017 and summer 2018, and Licenciada Rosita Jiménez Lorenzo and I co-hosted the workshops in January 2019, summer 2019, and December 2019. I have presented my background in section 1.5. Licenciada Rosita joined the project in January 2019, when she was working as one of two librarians at the *Biblioteca Pública Pablo Picasso* in Teotitlán, and I was looking for a space to host the language workshop. Licenciada Rosita offered use of the library. It would be a mutually beneficial arrangement, as I needed space, and the library was charged with hosting educational and cultural events that were free and open to the public. Since I was hosting the workshops in the library, Rosita was able to see how the workshops were being run and participate as a Zapotec speaker and educator. It was soon apparent that Rosita's contributions to the project were massive, and we decided to collaborate on this project more closely together. In summer and December 2019, we co-designed and co-implemented the workshop curriculum.

In addition to Rosita's assistance in planning and implementing the workshops, we have also relied on the participation of many other Zapotec speakers to interact with students in realistic, task-based contexts. Generally, there have been two types of interactions that students have with Zapotec speakers during the class: 'spontaneous' or 'planned' interactions. In the 'spontaneous' interactions, students were asked to go to a particular area and interact

with speakers who are going about their regular day and speak with them to complete some type of task. For example, on several occasions students have been tasked with finding out what fruits and vegetables are sold in the market or how much they cost. For these activities, we walked students to the market and they asked questions to the vendors who were there selling those fruits and vegetables. We did not inform vendors ahead of time that the group would be visiting, as we were carrying out the same task as other people in the market; learners could simply converse with vendors in a naturally-occurring environment. Similarly, students have interacted with rug vendors in the artisan market, asking them questions about the process of weaving as they are sitting at their stands answering similar questions from tourists and other shoppers.

In the 'planned' interactions, Rosita and I have arranged with speakers for the students to visit them and see some type of demonstration, asking questions about the speaker and the process that they are demonstrating. In these interactions, the speech itself is still fairly spontaneous, but the context is planned. For example, in January 2019, students visited the home and workshop of a local weaver who gave a demonstration of the weaving process and explained it from start to finish in Zapotec. This process of presenting the weaving process to an audience is something that many weavers in Teotitlán do regularly as they show off their artisanship to clients from out of town. Thus, the experience was somewhat realistic. Although generally these demonstrations are given in Spanish or English to individuals from outside the community—rather than in Zapotec to Teotitecos—most Teotitecos do learn the process of weaving incrementally from a family member, during which time explanations were traditionally given in Zapotec. In another example, students were brought to converse with a Zapotec farmer who explained to students what his process of growing and harvesting corn involved. This situation was perhaps less realistic, as generally knowledge about corn production is passed on not through a demonstration with extensive verbal explanation, but through learning by example. However, students did also plant their own corn seeds, learning through the farmer's example, supported by his explanation in Zapotec. The motivation for including these 'planned' interactions, despite the fact that they are less natural than the 'spontaneous' interactions, is to cover culturally important contexts for Zapotec use. The situations have to be planned because such interactions would typically take place within the family, but because these interactions are in some cases not happening, or are happening in Spanish, Rosita and I strove to create similar contexts in the language workshop environment.

Finally, parents have been crucial participants in the program, particularly parents who are Zapotec speakers (as most parents are). Parents have been involved at the end of each workshop as they are invited to a 'clausura' celebrating successful completion of the workshop, during which time students have showcased their work and we have summarized what we did throughout the workshop. I have encouraged parents to think about how they might further engage their children in learning and speaking Zapotec at home, offering both my own suggestions and a space for parents to discuss their ideas together. Furthermore, throughout the workshop parents have been welcome to join any and all activities; in reality, parents have been involved mainly during field trips, as they often accompany their children to provide extra help with chaperoning, as well as to learn from the outing alongside their

children. During these field trips, parents have also been encouraged to use Zapotec and engage their children in trying to speak the language.

4.5 Goals and program logic model

In this section, I would like to clarify the goals of the Zapotec language workshops (both in the short-term and in the long-term). To do so, I provide a logic model, which is a graphic representation showing the hypothesized connections between the specific activities carried out through the program and their intended results (Chen, 2005; Russ-Eft & Preskill, 2009). The logic model I present in figure 4.5 has six components, each of which is predicted to result from the component that precedes it: resources lead to activities, which lead to outputs, then to outcomes, then to impacts, and finally to goals. We begin by considering the *resources* that serve as inputs to the program: what are the resources (human, intellectual, financial, physical) upon which we can draw to implement the program? Next, we can consider the specific *activities* that are planned as part of the initiative. These activities result in *outputs*, which are the results that are measurable in the short-term. While other results, such as outcomes, impacts, and goals are also potentially measurable, the outputs are the pieces that have specific measures in the short-term; they are more concrete and more directly tied to activities. For example, the output "production of materials" can be easily tied to classroom-based language instruction, while an outcome like "acquisition of language skills" is less directly tied to the activities, as it may be influenced by outside factors more easily. Over time, the outputs are theorized to result in *outcomes*; like outputs, outcomes are theorized to be connected to activities, but the connection is more abstract and may be influenced by factors outside of the program itself. Next, *impacts* are the longer-term results anticipated (and as with outcomes, they may also be influenced by factors outside of the program), and finally the *goal* is the longest-term result that the program seeks to achieve. It is important to keep in mind that the logic model outlines the reasoning that was used in the design of the program; whether or not the reasoning proved to be valid will be addressed in the program evaluation, which is presented in chapter 6.

The ultimate goal of the Zapotec language workshops, as I understand it based on multiple conversations with individuals and groups over the course of my time in Teotitlán, is the re-establishment of sustainable language transmission within the community. Of course, this goal will only be achieved in the long term, and I anticipate that the Zapotec language workshops will contribute only partially to its achievement. As outlined in section 4.2, there are numerous other language revitalization initiatives taking place in Teotitlán which may also contribute to the same ultimate goal, though many of those programs are designed to have different impacts, outcomes, and outputs through the use of different activities and resources on the way to achieving the shared goal of sustainable language transmission and use. I will not comment on the results that other programs aim to produce (beyond what I have already outlined in section 4.2), but I hope here to provide a detailed reasoning behind the choices that were made in the case of the Zapotec language workshops for kids.

In order to understand why particular choices were made in implementing the workshops, it is important to understand the resources that were available to the team carrying out the initiative, which in most instances was led by Licenciada Rosita and me. These resources are schematized in figure 4.5. The most crucial resources available to us were human resources: the teachers, students, Zapotec speakers, and parents. Beginning with the teachers, it is important to note that some funding allowed for me to more easily participate in the workshops. As a graduate student at UC Berkeley, I received Oswalt Endangered Language Grants in 2016, 2017, 2018, and 2019[46] which covered the costs of my travel to and from Teotitlán along with my room and board, salaries for language consultants, and (beginning in 2019) some supplies for the language revitalization program which I was tasked with documenting. As a graduate student I was also privileged to have some personal research funding through UC Berkeley to cover the costs of some other supplies required for the workshops, and the personal summer stipend that I received through the University (along with my academic-year salaried appointments as a graduate student instructor and researcher and in 2018-2019 as a Foreign Language and Area Studies Fellow) provided me with financial stability in order to carry out this work rather than needing to seek other paid employment. Furthermore, a Berkeley Language Center Fellowship in fall 2018 allowed for me to focus on this project full-time for one semester while continuing to receive a salary. In January 2019, Licenciada Rosita's position as librarian in the public library provided her with access to resources and community status that helped to propel the program forward. Furthermore, as a Zapotec speaker and Spanish speaker, Licenciada Rosita was able to provide Zapotec language instruction and assist in both languages when confusion arose. But Licenciada Rosita was not the only Zapotec speaker on whose assistance and expertise the program could draw; the presence of several thousand Zapotec speakers in the community—with expertise as farmers, weavers, artists, community leaders, musicians, authors, healers, and business leaders—served as an invaluable resource. Furthermore, many parents and other family members of children who participated were Zapotec speakers, and even those who weren't served as valuable resources in encouraging Zapotec use with their children. Finally, of course, the students were the most important resource, and following the philosophy laid out in chapter 1, I would like to highlight that even for those students who had minimal or no previous Zapotec knowledge or experience, each student nevertheless has expertise, experience, and knowledge that they were able to bring and share in the workshops.[47]

In addition to the human resources outlined above, scholarly research on language documentation, language acquisition, and pedagogy (as discussed in chapter 1 and section 3.5) constituted a resource that informed the design of activities that we have pursued. We also had some institutional resources in the form of recognition from the municipality in support of our project, which also led to the use of the municipal center, cultural center, and library as physical resources and meeting spaces. The municipality's approval also allowed for us to

[46]The grants I received in 2016-2018 were each grants of one year; the final grant in 2019 covered two years of research.

[47]As mentioned in chapter 1, I take a broad view of 'expertise' and consider all stakeholders to—at minimum—be experts in their own life experiences.

advertise and promote the course on the community radio, and it helped to legitimize my role in the program to people who I had not yet come to know until I had interacted as part of the workshop.

The monetary resources we had from UC Berkeley and Oswalt Endangered Languages Grants allowed for the purchase of some course materials (such as paper, books, and coloring supplies),[48] and families also pooled their monetary resources to pay for more expensive activities that did not fit within the budget. Through the practice of *cooperación* or 'cooperation', participants would each contribute money or a necessary supply for the completion of an activity. This included participants chipping in to cover the costs of transportation for field trips as well as splitting the costs of or providing food and drink for community-building events.

These resources—both human resources and material resources—fed directly into the five main activities that comprise the program. First, radio announcements (in summer 2017 and summer 2018) served, as previously mentioned, to advertise the course and recruit participants. These announcements also raised awareness among both participant and non-participant community members that the workshop was being carried out.

Within the workshop itself, there were four types of activities pursued. Sessions involved (1) classroom-based language instruction, as well as structured opportunities for language use (2) in the classroom and (3) during field trips. During the classroom component, the instructors presented Zapotec grammar and vocabulary to students through interactive exercises (games, storybooks, crafts, etc.). The outputs of this activity were three-fold: (1) the production of materials in Zapotec for use at home (student-authored storybooks, completed worksheets, etc.); (2) the creation and use of Zapotec games (memory games with Zapotec vocabulary, duck-duck-goose in Zapotec, etc.); and (3) exposure to grammar and vocabulary through 10-15 hours of classroom learning per workshop. In addition to these outputs, we also measured attendance as another course output.

During the field trips, students interacted with Zapotec speakers using task-based exercises that encouraged students to apply what they had learned in realistic communicative contexts. This activity contributed to the output of 10-15 hours of interaction with Zapotec speakers during each workshop.

The final activity carried out through the program was that on the final day of each course, parents and other family members were invited for a visit, during which time students shared their work. The instructors also led discussions in which children and parents reflected on how the course went and what they hoped to do with Zapotec in the future. One output of this activity was that it contributed to the number of hours of interaction with Zapotec speakers, as many parents were speakers of Zapotec and participated using Zapotec. This outcome was also measured by attendance by parents and other family members.

The outcomes envisioned to result from the outputs are that the production of materials for use at home, creation of games, exposure to grammar and vocabulary, and exposure to

[48]While some funding was provided for supplies, it was minimal. Each set of workshops operated on a budget of less than $200 USD.

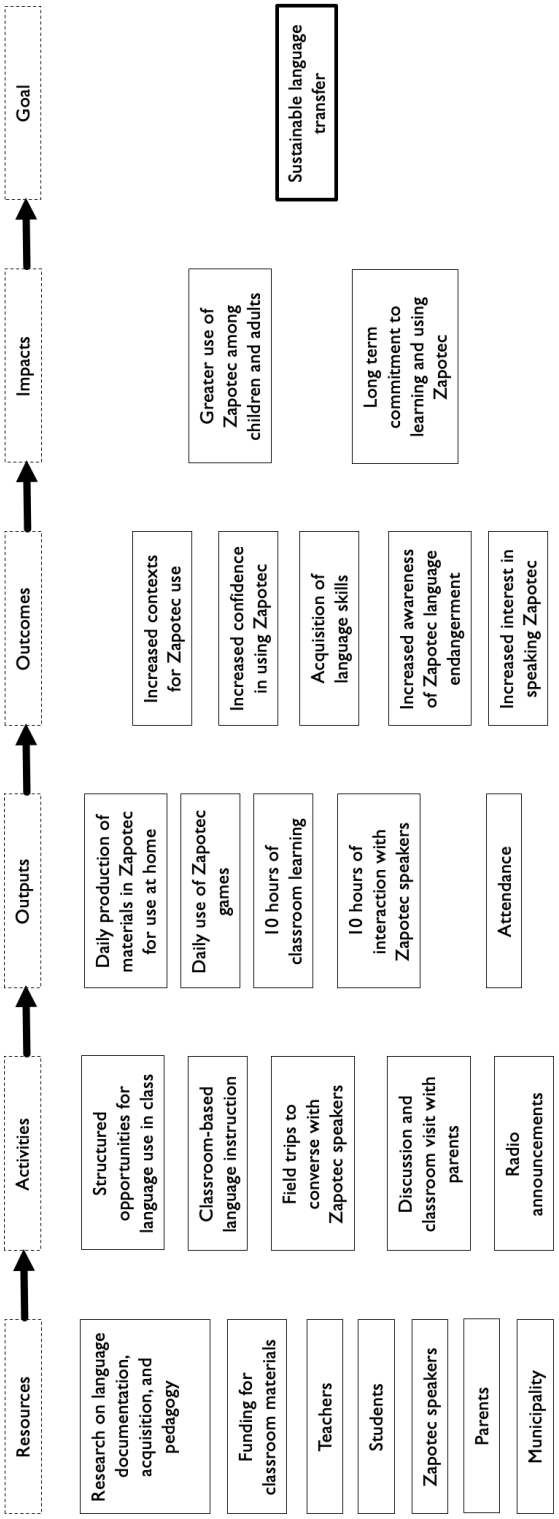

Figure 4.5: Zapotec language workshop logic model

Zapotec speakers will provide increased contexts for Zapotec use. For example, students can use Zapotec at home as they review their course materials, or they can play the games they learned. They can also encounter Zapotec speakers they met during a field trip and converse with them in Zapotec. These outcomes were observed and measured through interviews with participants and their parents, where they were asked to report the languages that they use in different contexts (chapter 2). It was also measured through day-long naturalistic recordings which are tagged for the language of use; this data was then analyzed to determine whether any changes in language use could be observed (chapter 5). Additionally, the program was expected to increase confidence in using Zapotec, as the activities done in the course involve practicing the language. Again, this outcome was measured through interview data in which I asked participants and their parents to report how confident they think others would be in using Zapotec in different contexts, as a proxy for their opinions about their own confidence (chapters 2). Another outcome is the acquisition of some words, phrases, and grammatical concepts of the Zapotec language. This can be observed through classroom audio recordings and the teacher's participant observations regarding to what extent learners are acquiring the target language (section 5.1). It can also be confirmed through the day-long naturalistic recordings, in which we may or may not hear students successfully using the language taught in the course (section 5.2). The outcomes that have been observed will be presented and analyzed in chapter 6.

The final outcomes observable over the timescale of this study are an increased awareness of Zapotec language endangerment and increased interest in speaking Zapotec (for students, parents, and community members). The inter-generational interactions are expected to get people interested in speaking Zapotec in those contexts. Plus, it is anticipated that the visibility of participants throughout town (especially as we take field trips and as a result of advertising the course) will increase awareness among a larger audience of community members. Changes in awareness and interest will be observed through interviews with participants, parents, and community members; these observations and their analysis are further discussed in chapter 6.

The core anticipated impacts are greater use of Zapotec among both children and adults, and the formation of a long term commitment to learning and using Zapotec. These impacts are anticipated in turn to contribute to our ultimate goal: the (re)establishment of sustainable language transfer. Of course, this ultimate goal will only be established over the long term, and while the outputs will be observable, and the outcomes and impacts of the program may be observable over the course of its implementation from 2017 to 2019, it is also possible that the impacts and goal will not yet be observable, as this study includes data on only the first two years of program implementation. A full consideration of the data on the program's results and an analysis of the success of the program will be undertaken in chapter 6; the purpose of this section is to highlight the thinking behind the choices in implementation that were made.

4.6 Implementation

4.6.1 Overview of workshops from 2017-2019

I advertised the first and second language workshop on the local community radio, *Tsae Xigiae*, as well as with flyers around town. As an outsider, I tried to make myself as available as possible for anyone who had questions about what I was doing, or who wanted to get involved. I spent time at the Municipal Center for anyone who wanted to ask questions, and I provided my contact information (name, phone number, email, local address) for questions as well. During the first set of workshops, a couple of people phoned me after hearing the announcement on the radio, but very few others approached.[49] Instead, most participants arrived to sign up for the first course on the day it began. Once some students were coming regularly, they were able to invite others, and the course grew from there. Though there was very low retention from the summer 2017 to the summer 2018 workshop, from that point retention and enrollment both increased (see table 4.1), and I stopped advertising on the radio after summer 2018 as the course already had a high student-to-teacher ratio. Nevertheless, it remained open to any interested students who arrived. Instead of announcing via the radio, I invited the participants from previous iterations to attend again, and also asked them to let others know about the course as well.

Although the foundational methodologies discussed in section 3.5 and the overall logic model discussed in section 4.5 remained in place throughout the project, there were some shifts that are worth noting. The most dramatic occurred in January 2019, when the workshop moved to the library and Rosita joined the team. The first two summer workshops were hosted in the multipurpose room of the municipality. This space is a large, open atrium with a roof, and I would generally set up several tables with folding chairs to one side of the room (figure 4.6). I borrowed whiteboards that were available through an English language teaching program that used the space at other times, and I sometimes hung illustrations and other work from the walls. However, the space was also shared at times with other groups, and its large and open nature made it echoey, particularly when rain would fall on the tin roof. The library, on the other hand, was designed for exactly this kind of educational activity (figure 4.7). There were ample tables and chairs, a small blackboard, and supplies like pencils, scissors, paper, and computers that could be used during the course.[50] Furthermore, while the library was open to the public during the times we used it, generally there were no other large groups meeting, but only individuals or small groups who kept their noise to a minimum. And of course, as discussed in section 4.4.2 above, using the library also led to Rosita joining the project and helping to shape it into a more successful program.

Once Rosita joined the team, it also allowed for another shift in the program, away from the model of each session being one hour of classroom time and one hour of interaction with

[49] As I mention elsewhere, only one person signed up with me before the course at the Municipal Center, and I am unsure of whether that person had sought me out after hearing about the program, or had simply run into me while on other business at the municipality.

[50] Computers were sometimes available, and sometimes down for maintenance.

Figure 4.6: Image of one student reading his final project to the class in the multipurpose room on the last day of the summer 2018 workshop.

a Zapotec speaker to a 'block' format, with one day in the classroom and one day with a Zapotec speaker. This allowed us to cover material in the classroom at a more relaxed, realistic pace that allowed for learners to take their time to complete projects and tasks rather than rushing through in order to join in on the excursion. Furthermore, because Rosita was present in the classroom, these classroom days also involved interaction with a Zapotec speaker, as Rosita would use Zapotec with the students. Furthermore, by planning to have more time for the field trips, we were able to travel farther and spend more time at our destinations.

January 2019 marked the start of the winter Zapotec workshops. Because students were also in school at this time, we decided to offer two sessions, one in the morning and one in the afternoon. This would allow students from both elementary school shifts to participate. This model was somewhat effective, as enrollment overall in January 2019 increased. However, because students were split into two groups, some sessions had only a few students in them. While this allowed for more one-on-one time with teachers and speakers, it made it difficult to help students form a community of learners amongst themselves (particularly when the

Figure 4.7: Image of students working inside the library during January 2019 workshop.

small group was composed of students of diverse ages and Zapotec proficiencies). It also placed an increased burden on speakers who participated in 'planned' interactions, as they needed to commit twice as much time to attend to two groups of students. This two-session model was repeated in December 2019, with a lower attendance rate (as mentioned before, likely due to scheduling conflicts resulting from the holidays). Once students were on school holidays beginning on December 23, the sessions were joined together into one morning session, following the same format as the summer workshops.

Finally, another change the workshops underwent over time was a gradual shift to including more and more activities that are less obviously tied to language, but nevertheless contribute to community building and language learning. Throughout interviews, focus groups, and *photovoice* (section 6.2.1), many people mentioned the importance of Zapotec culture generally, and the link between language and culture. This led Rosita to propose more field trips to places of historical and cultural significance. These field trips still involved exposure to Zapotec, but often Zapotec language use was less obviously the central element of the event. For example, in January 2019, we took students and their families to climb Picacho, a mountain of importance in Teotitlán (figure 4.8). During the climb, students took

Figure 4.8: At left: Students returning from a visit to Picacho. At right: View of Picacho from the archaeological ruins behind Teotitlán's colonial church.

photos of plants and animals and were encouraged to ask the adults about them in Zapotec. Adults were also encouraged to converse among themselves and with the children in Zapotec. Although Zapotec was not exclusively used (much of the conversation—especially amongst the children themselves—was in Spanish), it was used from time to time throughout the excursion. Furthermore, parents reflected at the end of the workshop on how they found this particular excursion to be helpful in building a community of parents who want to promote Zapotec with their children.

Similarly, in summer 2019, 36 students and parents participated in a visit to Monte Albán, a Zapotec archaeological site and UNESCO world heritage moment located about a two hours' drive west of Teotitlán. During the trip, students and their parents were encouraged but not required to converse in Zapotec as they explored the site. Furthermore, Rosita explained—in both Zapotec and Spanish—the historical significance of the site, linking it to participants' own cultural heritage, and encouraging participants to consider the contributions that Zapotec people have made to what is now known as the nation of Mexico over the course of history. Later in the week, back in Teotitlán, students were asked to create their own storybooks (discussed further in section 4.6.6), and many students chose to write about their visit to Monte Albán. In interviews, focus groups, and a feedback survey conducted following this activity, students and their parents commented on the impact of visiting Monte Albán together, noting increases in their pride for their Zapotec heritage and a deeper interest in learning and speaking Zapotec proudly. Furthermore, the books created by students showed progress in their Zapotec language production – both written and oral –

and students' willingness to present them publicly showed a move away from negative language ideologies towards the kind of linguistic pride that is necessary for successful language revitalization. Thus, while the visit to Monte Albán itself did not have a specific language learning goal attached to it, it seems to have a positive effect on learning outcomes overall.

While this section provided a glimpse at a high level into what took place during the language workshops, I would like in the following sections to take a more detailed look at what students were able to accomplish through the course. I'll start by providing a sample lesson plan for a representative set of two days in the Zapotec language workshop.

4.6.2 Sample lesson plan

Here I present the lesson plans developed for two days of the winter 2019 workshop focused on the communicative goal of conversing about what you see while on a hike. What I present below is a modified version of what took place during the workshop, with improvements that I would hope to implement in a future iteration of this lesson. The overall structure of the module follows closely upon Supahan and Supahan (2001) and their model of communication-based instruction for teaching and learning Karuk. However, these lesson plans diverge slightly from Supahan and Supahan's model, as the mixed-level nature of the group means that different students may have different communicative goals based on their proficiency. For example, while all students might have a shared goal of being able to describe what they are seeing while on a hike, their degree of complexity might differ, with beginning students striving for phrases like, "Look! A frog!" and more advanced students striving for more complex conversations like "Mom, do you see those three green frogs on that rock?" These different possible learning targets are addressed in the sample lesson plan below.

1. **Communicative goal**: Converse with others about what you are seeing while on a hike, and ask questions about what you are seeing such as "What's that?" and "How many do you see?".

2. **Setting the stage** *(approximately 20 minutes)*: In this phase of the lesson, the instructor should connect the day's goal with some knowledge that students already have so that they can begin to form a link between their existing knowledge and what they will learn. During the previous day, students in the Zapotec workshop had created cutouts of their family members (figure 4.9), so students practiced and presented short dialogues with their cutout family members using proper greetings (all of which had been learned the previous day). This connected to one of the vocabulary goals of today's lesson: numbers. Instructors can ask students how many brothers, sisters, or other family members each student has. Throughout the class, but particularly during the *setting the stage* phase, students should be encouraged to communicate in whatever way they feel comfortable (including using Spanish) so that they can form connections between any existing knowledge (including knowledge in Spanish) with the target language.

Figure 4.9: Sample of cutout family members created by Nee

3. **Comprehensible input** *(approximately 30 minutes)*: Students are exposed to the numbers 1-30, along with other language, through reading the book *Beniit kon xpegigan* (Lazo Martínez et al., 2020), which was storyboarded and illustrated by Celine Rezvani, an undergraduate at the University of California, Berkeley, before being adapted and translated into Zapotec by the remaining authors.[51] The book presents the numbers in sequence as part of a story in which the main character, Benita, flies over town with her balloons. For example, in figure 3.3, the number one is presented through the one rooster that greets Benita, and the number two is presented through the two men who are farming corn. This input is comprehensible as it is naturalistic language in the form of a contextualized story, and it contains elements to help beginning students understand what's happening. The use of images (which the instructor can point to while reading key words) as well as the key number words in red with their corresponding numeral assist learners follow the storyline. Furthermore,

[51]See Nee 2020 for a detailed discussion of this book and its use in the Zapotec language workshops.

the repetitive nature of the story allows students to recognize an overall pattern in the plot and language, as well as some words that are repeated in slightly different contexts. Instructors are encouraged to further engage students by inviting students to read the Zapotec and/or Spanish text aloud if they feel comfortable, as well as to ask comprehension questions such as "What is this?" while pointing at an illustration or "How many are there?" and counting together. These questions can be targeted for learners of different ages and proficiencies.

4. **Guided practice** *(approximately 10 minutes)*: Students stand in a circle with a large die. Students take turns tossing the die and adding up the total until they get to 30, naming the numbers in Zapotec. For example, the first student might roll *chonn* 'three' and the second student might roll *jai'* 'five'. The second student would say *chonn kon jai'...xonn* 'three and five...eight' or a similar phrase. This would continue until students reached or surpassed a total of 30. For younger students who may be learning to add, fingers can be used to count from the previous total to the new total: *chonn, tap, jai', xop, jez, xonn* 'three, four, five, six, seven, eight'. Furthermore, all students should be invited to count together and help out classmates who are struggling. This activity can be further gamified by playing as two teams; if a team is able to roll a total of 30, they get a point, but if the team surpasses a total of 30, the opponent gets a point.

5. **Comprehensible input** *(approximately 20 minutes)*: To expose students to Zapotec ways of expressing the location of one object relative to another, the linguistic elicitation tool Topological Relations Picture Series (TRPS) was used (Bowerman, Pederson, & Levinson, 1992). TRPS is a set of images where a target item (in orange) is positioned relative to some ground. For example, there is an image of a cat under a table and an image of a piece of gum stuck under a table. These images are designed to capture a wide range of possible topological relations that might be expressed differently in different languages. Furthermore, because these images are designed for cross-linguistic study, they are drawn in a way that is fairly culturally neutral so that they are relevant in a wide range of cultural contexts. In this activity, the instructor presents the TRPS image cards and asks students to group them together based on how they would say the spatial arrangement in Zapotec. For example, in English, the two scenes described above would go together (both the cat and the gum are *under* the table); in Zapotec, however, the cat is *zha* 'under' the table while the gum is *tex* 'on the chest of' the table. Ask students how they would describe the image, calling on a Zapotec speaker's opinion if the children don't know or use calques from Spanish. Then have students group the response with other similar responses (i.e. *zha meexih* 'under the table' would go with *zha yu'u* 'under the roof', while *tex meexih* 'stuck to the table' would go with *tex pader* 'stuck to the wall', etc.). Students are invited, but not required, to write the example sentences given.

6. **Guided practice** *(approximately 20 minutes)*: Each student selects nine TRPS cards

and arranges them in a three-by-three grid to play a form of Bingo (figure 4.7). This will require at least two sets of the TRPS cards (one for students to create their boards and one for the instructor to use to call the images), and possibly more if there are a large number of students. The instructor draws a card from TRPS and describes the scene, such as 'the cat is under the table.' If the student has that image, they put a token on it. The first student to have all nine of their cards called wins (you can also play a faster version where any three in a row wins). The student must describe all of their images in the target language in order to win. The winner can be asked to then become the caller, pulling and describing the TRPS cards for classmates. To play more than once, students can simply exchange their cards for a new set of nine cards.

7. **Guided practice** *(approximately 10 minutes)*: Instructor uses an *I Spy* book or similar images (Marzollo, Wick, & Carson, 1992) asking students *a rugietu?* 'do you all see?' about different figures. This can include previous vocabulary, such as numbers (Do you see six marbles?), colors (Do you see a green horse?), and objects (Do you see an ear of corn?). Students search through the image to answer the question, and when they find the object(s), they are encouraged to describe where it is in relation to other objects, using the vocabulary introduced through TRPS. If students feel comfortable, they can also ask if others see objects in the image.

8. **Independent practice** *(approximately 30 minutes)*: Students are divided into teams, and each is given a page from an *I Spy*-type book. Each team has 10 minutes to write 10 questions asking 'Do you see...?' in the image. For example, students can write, 'Do you see three orange cows?' if there are indeed three orange cows in the image. Once the teams are finished writing their clues, the teams exchange clues and images and race to answer all of the clues; the first team to find all 10 answers wins, though they must describe for the class where they found each item. This activity can be repeated depending on time and student interest.

9. **Assessment** *(approximately 2 hours)*: In this lesson, the assessment takes places on day two of the module, with students and their families participating in a hike to top of the Picacho mountain in Teotitlán. Before the hike, students and parents discuss what they'll be doing with instructors, who encourage all participants to speak in Zapotec as much as possible. Students are provided with smartphones and sound recorders and are tasked with making observations about what they see during the hike. They are encouraged to ask adults for the names of different plants, animals, and locations that they see along the way, using the communicative skills practiced during the previous day's lesson. This activity can be made more guided with the use of a worksheet (figure 4.10). This worksheet, titled 'What did you see?' asks students 'Did you see...a dog? ...a cat? ...a sheep?' etc. Students are meant to check either *eejih* 'yes' or *kedih* 'no'; if they saw the thing in question, they can also answer the question *Bell bagiu?* 'How many did you see?'. They are they invited to draw what they saw in the box to the right of the questions. Finally, a free answer space at the bottom asks *Xi*

masru'u bagiu? 'What else did you see?'. Students can write and draw their additional observations in this space. Figure 4.11 shows how one student completed this activity (though it was part of a separate module carried out in December 2019). Furthermore, students can be invited to take photos, videos, and audio recordings during the visit that can then be used in the classroom to create multimedia presentations about what students saw during the visit. Students can work independently or in groups to create presentations and stories about the trip that will be shared with parents during the final day of the workshop. Integrating the use of technology with language learning not only promotes language learning itself, but also encourages the idea that Zapotec is a living language that is suitable for all aspects of life—including new technologies (Lillehaugen, 2019). Furthermore, final projects can be tailored to each individual student's level and abilities. In this case, some younger students worked together to create presentations with simple text such as a photo of a bull and the text *Bagie' guun* 'I saw a bull' (figure 4.12, left). More advanced students worked together to create more complex texts, such as *Primer guzunee kie' gie bets chiru bazilaaza tubruin lo gi'e, bagie biub chiru bagie guraghu...* 'First, I arrived at the top of Picacho and I rested a bit on a rock, I saw leaf cutter ants and lizards...' (figure 4.12, right).

4.6.3 Analysis of sample lesson plan

I'd like to highlight the ways in which this lesson builds upon the insights and lesson structure presented in Supahan and Supahan (2001). Overall, the general structure (setting the stage, comprehensible input, guided and independent practice, and assessment) is maintained, though some steps (comprehensible input, guided and independent practice) are iterated more than once to target different components of language that are required to meet the overall communicative goal of the lesson. Furthermore, the assessment is given not in the form of a traditional test or other exam, but through using the language to complete a communicative task with speakers of the language.

Moreover, students are encouraged to work independently to build upon their existing knowledge and abilities to become continuous learners of Zapotec. At various points throughout the lesson, instructors have the opportunity to guide students to ways that they can learn new vocabulary and grammatical structures on their own. This could be through encouraging students to ask one another if they can't remember a particular word, directing them to resources like the online dictionaries for TdVZ, or modeling how to ask a Zapotec speaker for help. These skills in self-directed learning will hopefully assist students in continuing to learn Zapotec throughout the year, and not only during the short language workshops (this will be further discussed in section 4.6.4).

Finally, the capstone assessment of the lesson is itself a community building activity, providing an opportunity for students and their families to spend time together and practice language use as a group. Participants are encouraged to collaborate on documenting and

Xi bagiu?

A bagiu...

	eejih	kedih	Bell bagiu?	
...bekuh?				
...zhit?				
...zhilih?				
..beu?				
...bag?				
...bad?				
...bedih?				

Xi masru'u bagiu?

_____

_____

_____

_____

Figure 4.10: Sample worksheet for a hike to Picacho

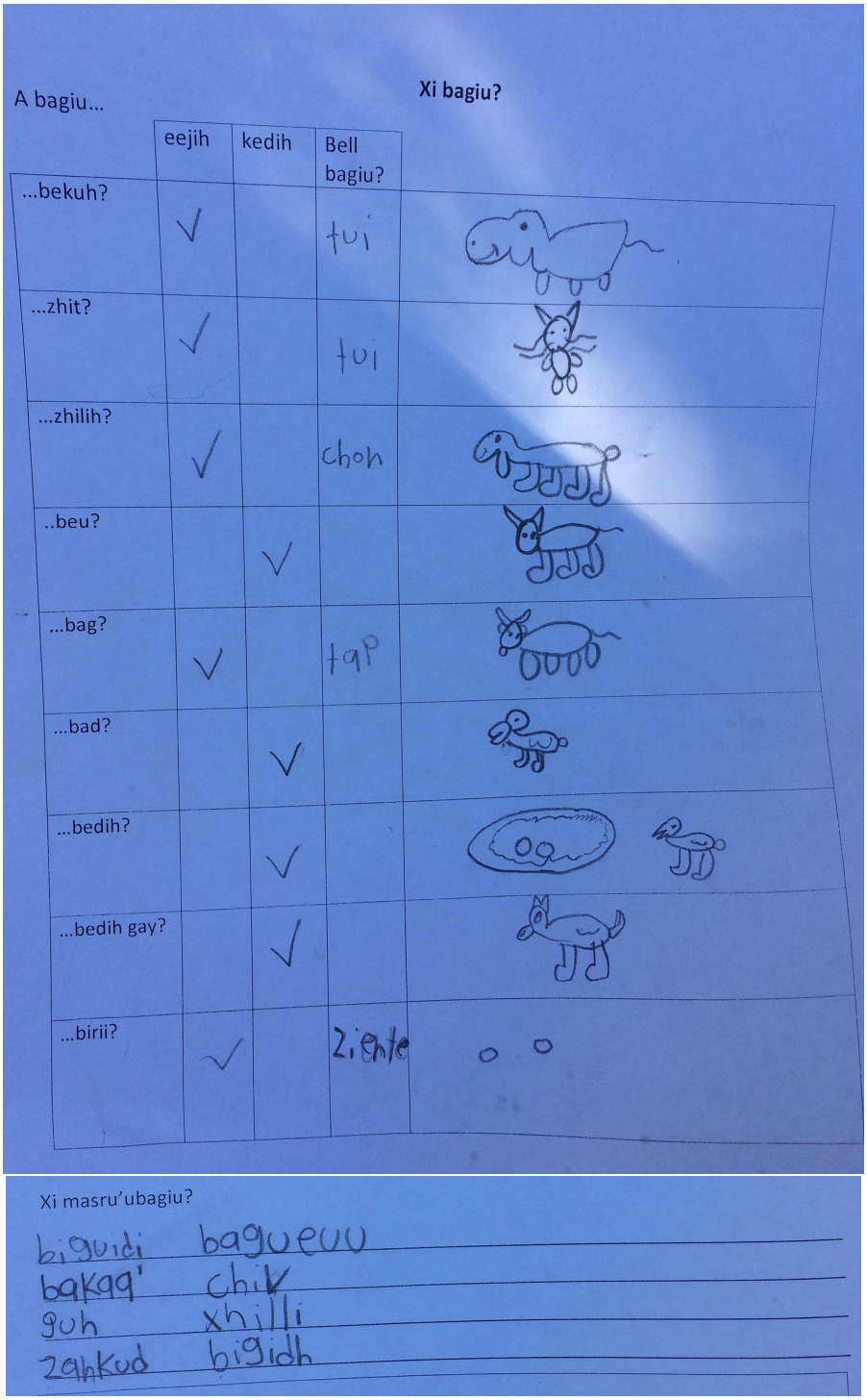

Figure 4.11: Example of student work

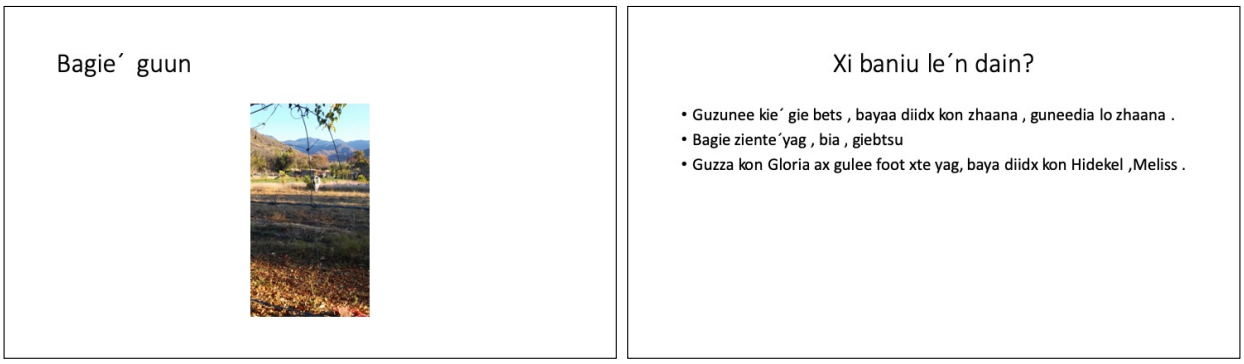

Figure 4.12: Example slides from two student presentations

reflecting on their experience, and this process serves to reinforce feelings of community amongst participants.

4.6.4 Results of sample vocabulary learning activities: Concentration, Go Fish!, and dictionary use

Another important consideration that was taken into account in designing the curriculum for the workshops was how to effectively increase students' vocabulary. Furthermore, we hoped that our methods would be ones that would not simply promote language learning in the classroom, but which students would be able to take with them and use throughout the year, and which would contribute to the creation of a sense of community among learners. In this section, I present my observations on the outcomes of some of these vocabulary learning activities, specifically the creation of Concentration and Go Fish! games for vocabulary learning, facilitated by the use of the Talking Dictionary for TdVZ (Lillehaugen et al., 2019).[52]

In order to motivate student learning, we sought to gamify the learning process. At the same time, we hoped to increase the amount of immersion that students were exposed to. For this reason, we planned repeated use of two very simple games for vocabulary learning: Concentration and Go Fish! Both games require the same materials: a set of cards showing vocabulary items in pairs. These pairs could be two identical images of a target word (such as two pictures of a fish to represent the word 'fish'), two instances of the written word (such as two cards bearing the phrase *bell niss* 'fish'), or one card with an image and one with the word. Each of these possible configurations targets a different skill. Having two images would require students to remember the target word and associate it with its proper meaning, but only if students were required to name the image aloud in order to play; this

[52]These observations are based on what I remember of the interactions and have recorded in my personal notes and also through audio recordings of the classes. The conversations transcribed in the remainder of this chapter come from those audio recordings of class sessions.

method could also result in a sidestepping of any language learning if students are not stating the names of the images in the target language, as they can then simply identify pairs based on the images. Similarly, having only the written words could be a way for students to practice their reading and pronunciation skills (if they are required to read the words aloud), but this activity does not require students to make any connection between the word and its meaning. Students could simply find orthographic matches without knowing what the words referred to in the real world (and without connecting the orthography to its pronunciation if they don't read the words aloud). The mixed option—one card with an image and one card with the word—requires students to use their reading skills to decipher the written word, and then to determine whether or not the meaning of that word matches with the image. Thus, even if students are not being closely monitored and required to state the name of each object aloud, they must know what each word means to determine whether or not they have found a pair.

I relied on student generation of materials for each iteration of these two games. I provided students with pairs of small cards (approximately 3" x 4"). I would then explain the semantic domain that we would be targeting, such as animals, birds, insects, colors, body parts, or daily activities. Students were then free to chose any word within that semantic domain and were asked to write the word in Zapotec on one card and illustrate the word on the other card. In some cases, I also asked students to write the word on the board; in other cases, they told me their chosen word and I added it to a list on the board. This was to ensure that students did not duplicate the same word multiple times.[53] It also allows the instructor to monitor students as they are selecting their vocabulary; the instructor can assist any student who has incorrectly identified a word-meaning pair (which happened somewhat frequently when younger students used the talking dictionary, as explained below) or who has drifted away from the target semantic category.

At the same time, allowing students to select their own vocabulary words, rather than have the instructor provide a set of words that students are required to learn, allows for students to (1) draw on their pre-existing knowledge and (2) tailor the content to fit their own personal interests. In one instance, students were asked, 'What do you think that we'll see on our walk to the cave tomorrow?' Students were allowed to respond in any way they saw fit. Students shouted out possibilities in Spanish: a tree, rocks, the chapel. I asked students to use the talking dictionary website on their cell phones to find the word they want in Zapotec. I provided an example, searching for 'tree' and finding *yabz̈i*. Students were then split into groups, with each group receiving a cell phone and instructions to find their own words using the Talking Dictionary. The hope was that students would learn how to navigate the dictionary on their own so that they could continue to use it on their personal devices outside of the class. Some of the results of this process are shown in figure 4.13. Note that nearly all of the cards presented a spelling that matched the talking dictionary. The only exception was two pairs of cards representing 'wild rabbit' which is spelled in the dictionary

[53]Avoiding multiples is not strictly necessary, but both games are easier and more interesting to play if there is only one pair for each word.

Figure 4.13: Student generated vocabulary and illustrations, including *yabzï* 'tuna cactus', *rugueu* 'riverbank', *yag* 'tree', *gurajw* 'lizard', *bala* 'house', *bisie* 'eagle', *gie sa'* 'pennyroyal', *dub* 'maguey', *bejw nis* 'turtle', and *guie billie llnually* 'La Cuevita/The Little Cave'.

as *bez gye'e* and on the cards as *bez guye'e*.

While there were some shortcomings with using the online dictionary, it was successful overall. One barrier that students faced is that when you search for a term in the talking dictionary, a result is always given. This is a calculated choice on the part of the authors, who wanted the website to be "rich in content from the very first encounter: the user would never be confronted with only a blank "search" box on the front page or a null search result" (Harrison et al., 2019, p. 33). However, young learners needed to be taught to check the meaning of an entry before assuming that it matched their search. For example (as illustrated in the transcript below), one group searched for the word 'maguey' (a type of cactus). The first result they found was *nupy* 'pulque' (a type of fermented beverage made from maguey), and the second result was *dub* 'maguey' (figure 4.14). I explained that students need to check that they have found the word that they searched for by double checking the Spanish definition.[54]

[54]In all transcripts produced here, dialogue is presented verbatim in Spanish and Zapotec and translated into English below. Any text in italics is Zapotec; translations from Zapotec to English are also represented in italics. The source of the recording is presented using the filename and timestamp at the end of each excerpt and will be archived (with restrictions) in the California Language Archive.

Julia: Tienen que checar, porque a veces cuando uno busca una palabra, la palabra que aparece es parecido, pero no es la palabra. Entonces aquí, al lado de la oreja, dice el significado de la palabra. Por ejemplo aquí, buscamos 'maguey', y encontramos *nupih*. ¿Qué es?
You need to check, because sometimes when you look for a word, the word that appears is similar, but it's not the word. So here, next to the ear, it says the meaning of the word. For example here, we looked for 'maguey', and we found *pulque*. What's that?

Student 1: Maguey.
Maguey.

Student 2: ¿En zapoteco?
In Zapotec?

Julia: Uh-huh, pero *nupy* no es 'maguey'. Es 'pulque'. Uh-huh, entonces ven más abajo. Este, *dub*. Este es el 'maguey', ¿no? El *dub*.
Uh-huh, but *pulque* isn't 'maguey'. It's 'pulque'. Uh-huh, so look below. This, *maguey*. This is 'maguey', right? The *maguey*.
(tdvz_class_20190723_jen_1 6:35-7:10)

However, students needed help remembering that the search was imperfect, as evidenced by students who continued to assume that the result was correct later in the activity when they searched for 'capilla' (chapel) and found *kaptain* (captain, borrowed from Spanish 'capitán') as the only result.

Dictionary: *Kaptain*.
Captain.

Student 3: *Kaptain*.
Captain.

Julia: Uh-huh, pero a ver, esto de la *kaptain*, creo que es, este, 'capitán', ¿no?
Uh-huh, but let's see, this *kaptain*, I think this is 'captain', right?

Student 4: No.
No.

Julia: A ver, ¿qué dice? Mira, buscaron, 'capitán', ¿no?
Let's see, what does it say? Look, you searched 'captain', right?

Student 5: ¡Oh! Sí, es cierto. Ahora vamos a buscar...
Oh! Yes, that's right. Now we'll look for...

Julia: Uh-huh. Y si no pueden encontrar la palabra que quieren, con Señora Rosita, pueden preguntar a ella, ¿sale?
Uh-huh. And if you can't find the word you want, with Señora Rosita, you can ask her, okay?
(tdvz_class_20190723_jen_1 8:02-8:26)

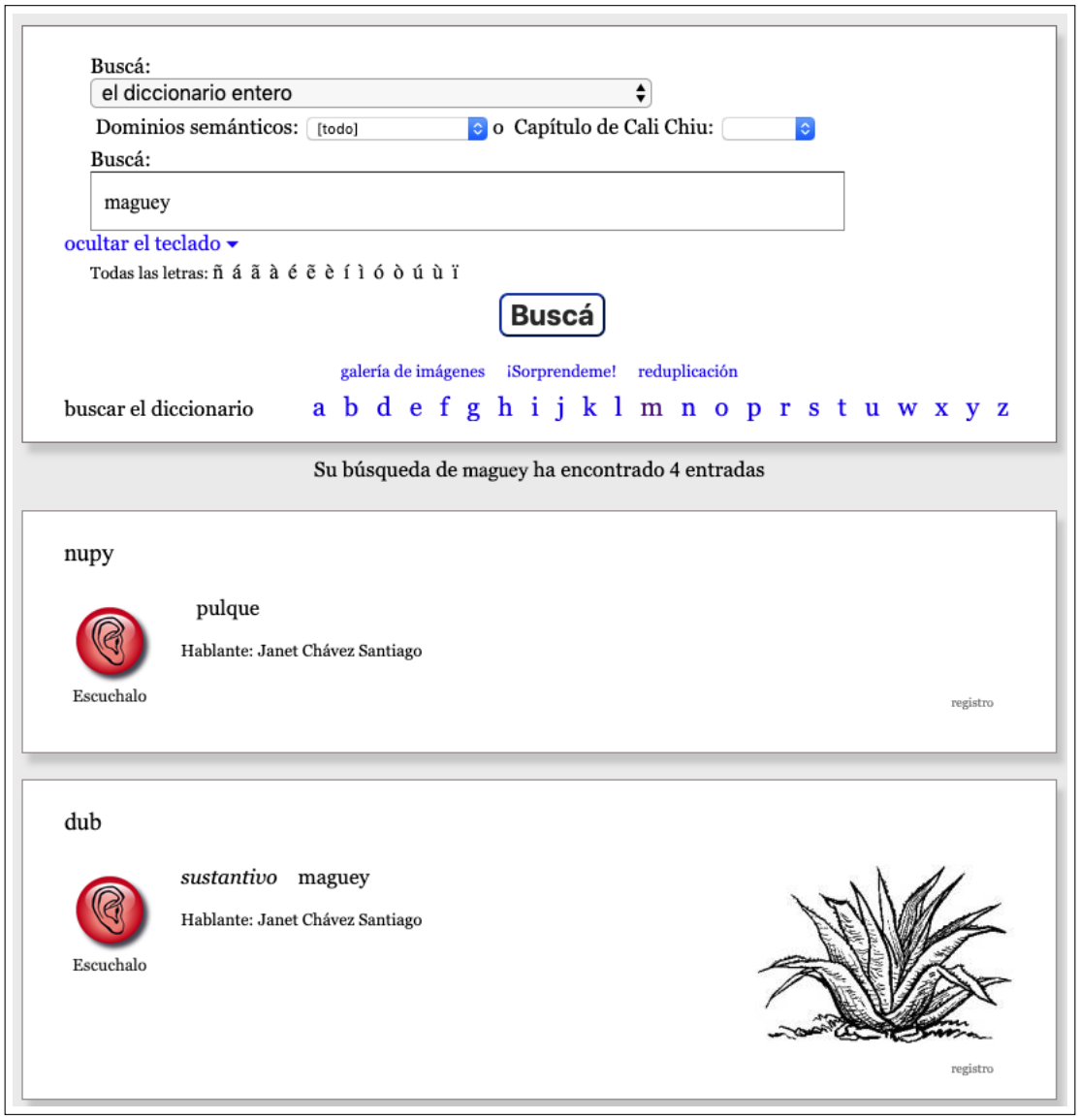

Figure 4.14: Search results for 'maguey' from the talking dictionary (Lillehaugen et al., 2019).

The second half of the conversation also highlights another issue that some students had with the talking dictionary, which is that there are some words that have not yet been added. In the case that a word could not be found, I encouraged students to ask Licenciada Rosita for assistance thinking of the word. In both cases, students were instructed in ways to find a word that they wished to know in Zapotec—either using the talking dictionary or asking a Zapotec speaker—that are sustainable outside of the language workshop.

Outside of these issues, students were able to successfully navigate the talking dictionary and find words of interest. Students frequently played the sound recordings on the website and repeated after them. Interestingly, students can sometimes be heard on classroom recordings saying the words in Zapotec *before* completing the search; they then find the word, play the recording, and repeat it again. This shows that while some students were looking up words that were previously unknown to them, others were finding ways of writing words that they already knew, building on their previous knowledge and gaining confidence and practice in using the words.

While I was not able to specifically observe how younger students were navigating the dictionary during this particular activity in July 2019, I was able to do so during subsequent activities with the dictionary in December 2019. In one activity, students were generating a list of birds and insects they might expect to see on a field trip to a nearby dam; I noted that the younger students were relying heavily on the images provided for some words along with the audio recordings, rather than focusing on the text. Students would scroll through the list of results, pausing on entries with images they found interesting. They would then play the sound recording and repeat it aloud. Thus, it seems that the inclusion of images facilitated younger students' ability to use and engage with the resource.

Furthermore, when creating cards for the Concentration and Go Fish! games, older students were able to work with younger students, with older students finding the word and younger students doing the illustration. Students who completed their pair faster were asked if they would like to make another one. Many notified me in Zapotec, *A baluzha* 'I've finished' and asked for another set of cards. One student in particular encouraged her classmate to use Zapotec:

Student 1: Dile *a baluzha*. Dile a, a la maestra Julia, *a baluzha*.
Tell her *I've already finished*. Tell, tell Teacher Julia, *I've already finished*.
Student 2: (laughing) ¿Qué es eso?
(laughing) What's that?
Student 1: Ya acabé.
I've already finished.
(tdvz_class_20190723_jen_1 26:00-26:08)

It took approximately 30 minutes to create all of the cards, and then we reviewed the pairs one by one so that students would be familiar with what their classmates created, which took another 20 minutes. This is important for two reasons: (1) students need to

know all the vocabulary to play the game and (2) some children drew pictures that were not straightforwardly identifiable (for example, the drawing of *gie' sa'* 'pennyroyal' in figure 4.13 is not obviously an instance of pennyroyal versus any other leafy plant). By reviewing the pairs one-by-one, all students are exposed to the full set of vocabulary for the game, and they are familiarized with the images that correspond to the words. I wrote all of the words on the board, and some students asked for time to copy them down for their own notes. The game itself took about 15 minutes, though it can be played multiple times in order to reinforce the concepts covered.

To play Concentration, the cards are shuffled and laid out into a grid, face down. Students take turns turning over two cards, naming what is on them. If the two cards turn out to be an image and its corresponding word in the target language, the student gets to keep the pair. The student with the greatest set of pairs at the end of the game is the winner. While it is possible to play the game in an immersive environment, using only a few key phrases in Zapotec, during the class students tended to speak to each other in Spanish, using Zapotec only to name the items. This was particularly true when there were no instructors present. Instructors encouraged students by asking them 'What's this?' in Zapotec and having students respond in Zapotec. Students who were not being actively monitored were more likely to state the word in Spanish, although they were also recorded as pronouncing the Zapotec words on their own but with less frequency than the actively monitored group. While naming the Zapotec words represents more active learning of spoken Zapotec, naming the meaning in Spanish while correctly determining whether the Zapotec word and illustration make a pair still demonstrates acquisition of the meaning associated with the written Zapotec form.

Once these cards are made, another activity that can be played is Go Fish! In this simple game, each participant is given a few cards (I usually give between 3 and 7 cards depending on the number of participants and the number of cards) and any extra cards are placed in the middle. If students know the phrases, 'Do you have...?', 'Yes', 'No', and 'Grab one!' they can play the game entirely in the language. Taking turns, students ask one another 'Do you have...?' and name one of the cards in their hand. If the student they ask has that card, they hand it over. If not, they instruct the student to 'grab one' from the middle. The student with the greatest number of pairs when all the cards have been paired up is the winner.

We carried out a Go Fish! game on August 6, 2019, working with another set of paired cards on the theme of objects that are used in the production of *binni gie*, sculpted wax candles that are often used for ceremonies like weddings and religious holidays. Although the language required for gameplay is fairly basic, in this class, participants did not stay entirely in Zapotec during the game. When students were confused about what to do next, they often used Spanish, as in the interaction at the beginning of the game below.[55]

[55]To protect the identities of students, they are provided with pseudonyms in the dialogue.

Julia:	Entonces yo por ejemplo voy a preguntar...Margarita, *¿a rapu zhidx? ¿A rapu zhidx?* So I, for example, am going to ask...Margarita, *do you have a pineapple? Do you have a pineapple?*
Margarita:	*Kedih rapdia.* *I don't have it.*
Julia:	*Kedih rapdiu.* Okay, entonces, voy a tomar uno de aquí. (takes a card from the center) *You don't have it.* Okay, so I'm going to take one from here. (takes a card from the center)
Student 2:	*Gits.* ¡Voy yo, voy yo! ¿Cómo, cómo? *Paper.* I'll go! I'll go! What, what?
Julia:	*¿A rapu...?* *Do you have...?*
Student 2:	Este, Daniel, *a rapu...?* Um, Daniel, *Do you have...?*
Julia:	¿Qué vas a preguntar de los...? What are you going to ask from the...?
Student 2:	*...bandeer?* ...flag?
Julia:	*Bandeer. Kedih rapdia.* Flag. I don't have it. (tdvz_class_20190806_jen_1.wav 21:20-21:47)

The last line of the interaction illustrates that often students would use gestures, such as shaking their heads, to indicate that they did not have a card, rather than using the Zapotec expression *kedih rapdia* 'I don't have it', which I then supplied in the dialogue above. Furthermore, not all students were able to correctly identify the name of items for which they had the illustration:

Student 1:	Leo, *¿a rapu getxier?* Leo, *do you have scissors?*
Leo:	No. No.
Julia:	*¿A rapu xix...xi?* *Do you have why...what?*
Student 1:	*Getxier.* Scissors.
Julia:	*Getxier.* Scissors.
Various students:	(looking at Leo's cards) ¡Si! Aquí está. (laughter)

(looking at Leo's cards) Yes! Here it is! (laughter)
(tdvz_class_20190806_jen_1.wav 21:52-22:02)

At the same time, the game environment was a friendly space for students to make mistakes and learn from them. In the above dialogue, the student who had made the mistake handed over his card and continued playing. Similarly, in the dialogue below, one student has trouble identifying the meaning of the word *beseer* 'bee' when she is asked for the card. Later, when she cannot remember how to say 'I don't have it', she asks for help and completes her turn.

Student 1: Elena, *¿a rapu beseer?*
Elena, *Do you have a bee?*
Julia: *¿A rapu beseer? ¿Xa niu 'beseer' dixtil?*
Do you have a bee? How do you say 'bee' in Spanish?
Students: (in chorus) Abeja.
(in chorus) Bee.
Julia: Abeja.
Bee.
Elena: *Kedih rap...*¿cómo?
*I don't...*what?
Julia: *Kedih rapdia.*
I don't have it.
Elena: *Kedih rapdia.*
I don't have it.
(tdvz_class_20190806_jen_1.wav 23:06-23:19)

Furthermore, examining students' multilingual practices without any lens of prescriptivism or purism, it is clear that students are able to use their skills in both languages to communicate effectively in order to complete the game, as illustrated in the excerpt below. In this passage, Gario first turns to a classmate to understand a word in Zapotec that he doesn't know. He then uses Spanish to provide an answer, and the game continues with students using a mix of Spanish and Zapotec to achieve their goals.

Student 1: Gario, *¿a rapu...?* ¡Ah, véte más para allá! *¿A rapu zhig?*
Gario, *Do you have...?* Ah, go further over there! *Do you have a bowl?*
Gario: (whispered) ¿Qué es eso?
(whispered) What's that?
Student 3: (whispered) Jícara.
(whispered) Jicara.
Gario: Jícara no tengo.
I don't have a jicara.
(tdvz_class_20190806_jen_1.wav 23:28-23:27)

Thus, the Go Fish! activity was effective in teaching vocabulary, but it was also useful for students to create community, helping one another through their individual turns. Overall, I think that it was crucial that the pairs be composed of one image and one word written in Zapotec as a way to ensure that students were indeed practicing the skill of matching a Zapotec word with its meaning, especially in cases where students were not directly monitored by the teacher. Because students have both Zapotec and Spanish skills to rely on, it is difficult to avoid using Spanish if that language is more accessible to the student in that moment.

4.6.5 Results of a sample field trip: Candlemaking

The Go Fish! game that was discussed in section 4.6.4 formed part of a larger goal for students to learn about the process of creating *binni gie'* 'velas de concha' (figure 4.15), handmade, sculpted wax candles that are used in various religious and life-cycle celebrations in Teotitlán. This topic was suggested as an important tradition in Teotitlán, and students were interested in participating in a hands-on demonstration of how these candles were created. On August 7, we took the students to visit Viviana Alavéz Hipólito, a well-known artisan who makes these traditional candles. She agreed in advance to provide a demonstration of her process, as well as answer questions from the students. In order to help support students in learning the language skills necessary to understand an explanation of the process, Licenciada Rosita and I planned a variety of classroom activities to expose students to some vocabulary that would be relevant and would likely come up during the demonstration. I present a brief overview of these activities before turning to an examination of the visit itself, which was audio recorded, and approximately 30 minutes were transcribed with the help of Efraín Lazo Pérez, Trinidad Martínez Soza, Elena Sánchez López, and myself using ELAN.

As discussed above, the first activity students completed was to choose words related to candlemaking, drawing the object on one card and writing the word on another so that the class could play Go Fish! Next, students read the book *Naan Bian Binni* 'Las velas de Doña Viviana' (figure 4.16). This book is an original work created collaboratively between two undergraduate researchers at the University of California, Berkeley—Gabrielle Haggett-Molina and Isela Peralta—along with Zapotec speakers Efraín Lazo Pérez, Trinidad Martínez Soza, one anonymous contributor, and myself. Gabrielle, Isela, and I came up with the general plot of the story, and Gabrielle and Isela created the illustrations and design of the book. I then worked with Efrain, Trinidad, and the anonymous author to translate the story into Zapotec (making necessary adjustments to the draft text). The book is still in draft form, but it is complete enough to be used in the classroom. The general plot is that a young girl is asked by her mother to pick up a candle that has been ordered from Viviana, but when the girl arrives, Viviana is still working and asks for the girl's help. They then walk through the steps of making the candle together. I invited students to help read the text, and one student read the title aloud for me. Because the reading process was going very slowly, I began to read the Zapotec aloud and then asked students to help translate to Spanish. Licenciada Rosita also helped to read the story in Zapotec as well, as illustrated in

Figure 4.15: *Binni gie'*, or 'velas de concha', arranged in front of a home altar in Teotitlán in preparation for a 'contentada,' which is part of a marriage celebration.

the conversation below. Rosita began to read the text (shown in figure 4.16), then struggled to pronounce part (which is expected given that TdVZ does not yet have a universally agreed upon standardized orthography). One student began to sound out the word as well, and Rosita agreed with their pronunciation and repeated after them. I then asked students what the line meant, and Rosita began answering. Many students responded together in unison for part of the translation, then Rosita suggested a translation that one student agreed with and repeated.

Rosita:	A, '*raxuyun*'
	Oh, *'we use...'*
Julia:	Aa, '*raxuyun*'
	Yes, 'we use...'
Rosita:	'*...raloo kolor...*'
	'*...various colors...*'
Student 1:	'*...raloo kolor...*'

	'...various colors...'
Julia:	Mm hmm
	Mm hmm
Rosita:	*'...par raloo...kud, kud..'*
	'...for various, occ..occ..'
Student 2:	*'...kud zhuyiin.'*
	'...occasions.'
Rosita:	*'...kud zhuyiin.' Aa, kud zhuyiin.*
	'...occasions.' Yes, occasions.
Julia:	¿Qué quiere decir?
	What's that mean?
Rosita:	Ocupamos
	We use
Students:	(in chorus) varios colores
	(in chorus) various colors
Rosita:	para lo que se necesite
	depending on what they're needed for
Student 2:	para...uh-huh, para lo que se necesite
	depending...uh-huh, depending on what they're needed for
	(tdvz_class_20190806_jen_1 44:18-44:38)

This interaction shows a high degree of collaboration in both reading (in Zapotec) and deciphering (in Spanish) amongst both students and instructors, and shows student engagement through the reading process. At the same time, it is worth noting that while a Spanish translation for the text was provided in the story, the translation that was given contained the same meaning but was not word-for-word. The text provided the translation 'diferentes colores' (different colors) and the students suggested 'varios colores' (various colors). This suggests that students were performing their own translation and not simply reading what had been provided for them.

The next day, I started class by asking students what questions they wanted to ask Viviana during our visit. Students were encouraged to share questions in either Zapotec or Spanish (which the students, Rosita, and I then worked together to translate into Zapotec). This activity is one that we commonly do before a field trip, so students already had some questions that they were familiar with and were able to suggest on their own. I wrote the questions on the board and all of the students who were able to copied them down. Because this activity can often be difficult for younger students who struggle with writing, I encourage these students to copy down what they can, focusing on the simpler questions, or to work with a partner who can copy the questions for them so that they can read them when the group arrives at the visit. The idea with this activity was to 'set the stage' for students to think about what they might learn during the visit, as well as to tailor their questions to what they themselves were interested in learning. They posed some basic questions that had been asked during other interviews, such as *Tu laa yubiu?* 'What's your name?', *Bell iiz*

Figure 4.16: Page from *Naan Bian Binni* 'Las velas de Doña Viviana'. The draft text here shows that wedding candles are pink and white, which is sometimes, but not always true; they are often yellow or plain white, depending on the desires of the families getting married.

yubiu? 'How old are you?', *Xi kolor ridxula'azte' yubiu?* 'What's your favorite color?', *Xi komiid ridxula'azte' yubiu?* 'What's your favorite food?', and *Xi main ridxula'azte' yubiu?* 'What's your favorite animal?', as well as questions specific to this field trip such as 'Cuando empezó a hacer esto?' (When did you begin doing this?). The latter question was posed by one student in Spanish, and the students and Rosita worked together to translate the question to Zapotec as *Guk guslau runiu binni gie'?*. I suggested, *guk* 'when', and a student suggested the verb *guslau* 'you began', and finally Rosita added *runiu binni gie'* 'you make velas de concha'. Rosita also suggested some more complicated questions, such as *Tu balui yubiu runiu binni?* 'Who taught you to make candles?', *Suskatih a naa runiu binni?* 'For how long have you been making candles?', *Tu primeerte' bain binni gie' lo geedx re'e?* 'Who was the first to make velas de concha in the town?', and *Axt kali a baxel yubiu binni gie'?* 'To where have you sent velas de concha?'. Students wrote the questions in their notebooks,

which were then brought to the visit so that they could complete the interview.

Once students had copied down the interview questions, the group walked over to Doña Viviana's house for the demonstration. There, students sat on chairs in a circle around Viviana, who was positioned on the ground near her supplies: wax in an earthen jar, heated by coals, and various moulds for creating shapes from the wax (figure 4.17). Once everyone was settled, Viviana began telling her story. She spoke mostly to Rosita, creating wax shapes while she spoke about her life and how she learned to make candles. She and Rosita were highly engaged in conversation, with Rosita asking frequent questions. From time to time, Viviana or Rosita would turn to the students and ask them questions as well. Students seemed to be relatively engaged in the demonstration, as evidenced by their responses to the questions (though this engagement tapered off as more time passed).

Viviana: *Guluiya leetu xa ridie' gie'. A rindiagtu diidxza?*
I'm going to show you how to make a flower. Do you all understand Zapotec?

Students: (in chorus) *Aa, eejih*
(in chorus) *Yes, yes*

Rosita: *Te tiopdan per yu'udan kedih rindiagdian.* Dice ella que, este, bueno, en español, que les va a enseñar como hace una flor, *xa ridie gie'.*
Two or three, but there are some that don't understand. She says, well, well, in Spanish, that she's going to teach you all how to make a flower, *how to make a flower.*

Student 1: *Gie'*
Flower.

Rosita: *Xa ridie te gie'. Lain nden kayunian* explicar.
How to make a flower. That's what she's explaining.
(tdvz_class_20190807_jen_2.wav 19:59-20:17)

Furthermore, the discussion above shows Rosita's key role in facilitating student understanding of what's happening. She speaks directly to the students, both in Spanish and in Zapotec, translating key phrases for students and repeating Zapotec phrases. Students are listening to her speech, as evidenced by the fact that students will frequently repeat a word or phrase after her, even without being asked to do so.

Over the course of about twenty minutes, Rosita and Viviana mostly talked between themselves, covering topics ranging from how Viviana learned to make candles, to where she has traveled to show the candles, and other life events. During this time, the students listened passively, and over time became more restless and less engaged. Rosita tried to draw their attention back by explaining some of what was happening in Spanish. She used Spanish to grab students' attention, then switched back to Zapotec, seemingly using translation and repetition as tools to increase engagement and comprehension.

Rosita: Ahorita va a hacer animalitos, *mani'in.*
Now she's going to make little animals, *little animals.*

Student 1: *Mani'in.*
Little animals.
Rosita: *Figuur xte mani'in guinan urre.*
Figures of little animals are what she's going to make now.
(tdvz_class_20190807_jen_2.wav 43:59-44:03)

This seemed to be effective, as at least one student engaged with this repetition by repeating the Zapotec word back to Rosita. Later in the demonstration, Viviana interacted more with the students, asking them who their parents are in Zapotec. She translated some of her explanation to Spanish as well, though students' comprehension of Zapotec was also assisted by her use of the demonstration materials, such as producing a wax hummingbird and describing its name *badund* 'hummingbird' while holding up the wax hummingbird. After nearly 55 minutes of Viviana presenting her work, students began to ask their interview questions. A number of students participated, including some of the younger students, and some students asked more than one question. Some repetition occurred, with one student asking a question such as *Tu laa yubiu?* 'What's your name?' and a second student asking the same question again later. Students sometimes indicated their understanding by translating Viviana's responses in Zapotec into Spanish. For example, she answered the question of when she began making candles by saying '*Ocho anen* empezó *gaklii xtenian*' '*I was eight years old* when I started *to learn*' (tdvz_class_20190807_jen_2.wav 1:14:44), and a student asked, ¿Ocho años empezó?, confirming their understanding of the question. During this period, Viviana spoke in a combination of Zapotec and Spanish (such as in the code-switch mentioned above, where she used the Spanish verb 'empezar' instead of the Zapotec *guslaa* for 'begin'). Rosita also corrected some students when their questions were not understandable, and other students chimed in to help as well:

Student 1: *Tu primeer bain lo yubiu?*
Who first made it for you?
Rosita: *Mm-mm. Tu primeerte' bain binni gie'?*
No. Who first made velas de concha?
Various students: *Lo geedx.*
In town.
Rosita: *Lo geedx re'e.*
Here in town.
Student 2: *Lo geedx.*
In town.
(tdvz_class_20190807_jen_2.wav 1:16:42-1:16:50)

Students seemed highly engaged during the interview process. Overall, it seemed that the most effective parts of the field trip were these moments of active participation, in which students were able to see and handle objects that were being discussed in Zapotec, moments where students were being asked questions directly, and the interview portion. At the same

Figure 4.17: Doña Viviana explaining candlemaking to students

time, the direct questioning and interviewing sections were the least "realistic," as it is not common for children to perform these types of formal interviews, nor do adults typically ask such direct questions to children. Nevertheless, it was these moments that seemed to involve the most active participation from children.

4.6.6 Results of a sample writing activity: Creating identity texts

The final type of activity that I would like to discuss was the creation of *identity texts*, the theoretical underpinning of which is discussed in section 3.5.2. In this case, at the end of the three-week summer workshop held in July and August of 2019, students were invited to write their own stories, on any topic that they wished. They were encouraged, but not required, to write in Zapotec, and if they wanted to write in Spanish, that was also accepted. Students worked independently, in small groups, with the instructors, or with their parents to write a draft and their own, individual final project, which was then read aloud to the students and parents on the final day of the course.

We began the activity on August 6, when students were told that they would be creating their own eight-page story books. I asked students to first create a storyboard or draft of the book on a single sheet of paper that had been folded to create eight small squares. I provided a sample on the blackboard about *Te bekuh bichi'in* 'A little dog'. Students were

not able to complete their drafts in the amount of time available, and I invited them to take the drafts home to complete them. Many students were putting in a lot of effort not only into the text, but also into drawing illustrations on the storyboard, which was quite time consuming. I worked with one of the youngest students, who had not begun his project, and asked him what he wanted to write about. He did not respond; I asked him if he would instead like to simply draw the illustrations, which he began to do.

Five students ended up bringing completed drafts to class the following day; they were all about our visit to Monte Albán, though during the drafting process, some students had started to write about other topics, such as our visit to *gie' dam* 'owl rock' (a waypoint on the border between Teotitlán del Valle and the neighboring town of Santa Ana).

On August 8, students were shown how to create the physical books that they would need to complete the project. This process was somewhat laborious and time consuming, and involved exclusive use of Spanish. Once the books were made, students transferred text from their drafts (if they had them) or began writing directly onto the books. Some students were able to complete the task during the class period, but others took their books home to finish them as homework.

The final day of class, August 9, students brought their completed books back to class. Students took a few minutes to put final touches on their projects and practiced reading the books aloud to one another. Several students volunteered to read the book, while others needed encouragement. As illustrated in the conversation below, I provided encouragement, as did fellow students.

Julia:	(speaking to Ofelio) ¿Por qué te da pena? (speaking to Ofelio) Why are you ashamed?
Student 2:	A mi no me dio pena. I wasn't ashamed.
Julia:	(to student 2) Uh-huh. (to Ofelio) Párate. Con confianza, es lo que estamos ensayando aquí, ¿no? Como hablar el zapoteco con mucha...mucho orgullo. Párate. (to student 2) Uh-huh. (to Ofelio) Stand up. With confidence, that's what we're practicing here, right? How to speak Zapotec with much...much pride. Stand up.
Student 2:	¡Párate! Stand up!
Julia:	Órale. A ver...vamos a escuchar a Ofelio. Great. Let's see...we're going to listen to Ofelio.
Ofelio:	*Te bekuh bichi'in.* *A little dog* (tdvz_class_20190809_jen_1.wav 3:18-3:41)

In the dialogue above, a student is hesitant to present his project. I ask him why he is ashamed of presenting or speaking in Zapotec, and his sister (who had just read her project)

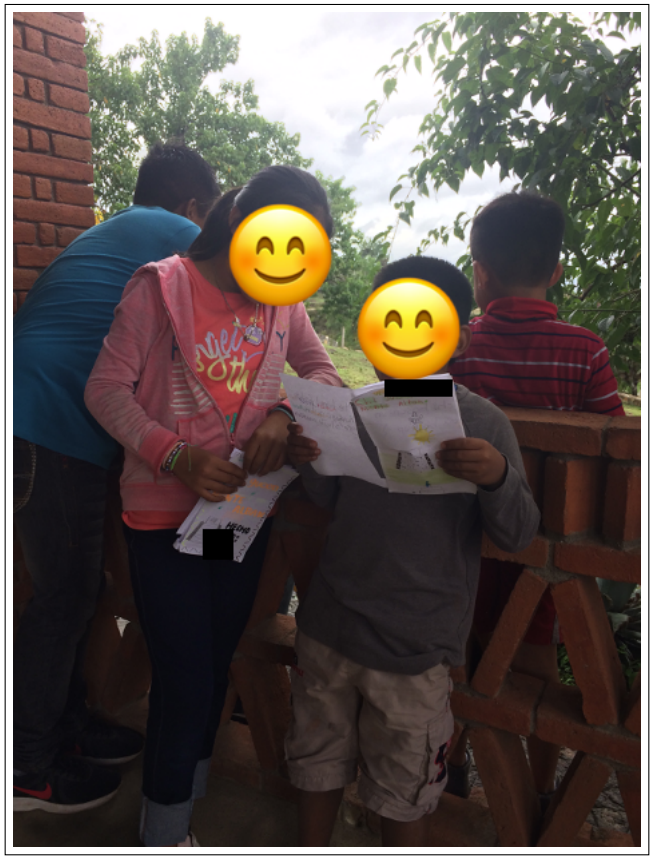

Figure 4.18: One student helping another to read their final project

mentions that she was not ashamed. She and I both encourage him to stand and read his project, which he then does, and the class applauds for him at the end of his book.

Later in the class, a few parents arrived for a short performance. Students recapped some of the activities that had been done throughout the course (in Spanish and in Zapotec) and the group sang three Zapotec songs together. Then, we all departed the library for a picnic area out in the countryside by the town's largest dam, where students and their families had collaborated to serve a celebratory lunch for all of us. After lunch, students were able to read their books aloud to their parents and fellow students (figure 4.18). This included the students from the dialogue above. In fact, Ofelio was able to read his book without hesitation at this time. Furthermore, when a different student struggled to read his story, others stepped in to support him:

Student 1:	Subimos...
	We climbed...
Adult:	'Subimos' es '*bazuneun, bazuneun.*'
	'We climbed' is '*we climbed, we climbed.*'

Student 1:	Ah, *bazuneun*, este, ¿cómo se dice 'pirámide'?
	Ah, *we climbed*, well, how do you say 'pyramid'?
Students & Julia:	(in chorus) *Piraam*
	(in chorus) *Pyramid*
	(tdvz_class_20190809_jen_3.wav 12:45-13:00)

Although this student was not able to remember the word, he was supported by the community of learners that we had hoped to create throughout the workshop. With this assistance, he was able to communicate his message in Zapotec. Furthermore, the practice that had been done earlier in the classroom seems to have helped students build their confidence, as students were generally eager to read their stories aloud for their parents without too much additional encouragement.

Furthermore, I would like to examine two of the projects that students created in detail, comparing how the authors of these two projects used their linguistic resources uniquely to achieve their goals. These two books can be viewed online via the California Language Archive (Lazo Pérez et al., 2016). The first book, titled *Chi bíuun Monte Alban* 'When we went to Monte Albán,' is written almost entirely in Zapotec, with only a few words borrowed from Spanish, such as place names ('Monte Alban,' 'Etla,' and 'Miahuatlan'), specialized archaeological vocabulary ('stelas'), and conjunctions ('although'). At the same time, some more commonly known place names (such as *Bak* 'Tlacolula') and more commonly used conjunctions (*chi kru* 'then') are used in Zapotec. Furthermore, the student incorporates the directional terms 'north, south, east, and west,' which were one of the vocabulary topics that had been covered earlier in the course. One page of this book is pictured in figure 4.19 at left.

The second book is similarly titled *Chi guoon Monte Alban* 'When we went to Monte Albán.'[56] This final project involves more Spanish, including several illustrations of areas of Monte Albán that were marked as off-limits to visitors with Spanish signs stating 'No pasar' (Do not pass). Thus, this student chose not to translate these signs—which in reality are in Spanish—into Zapotec, and instead represented them as they are in reality. The project also involves less text on each page, including several pages with only one object and its name, either in Spanish (as in 'una piramide', a pyramid) or in Zapotec (as in *gie'*, rock). One page of this book is pictured in figure 4.19 at right.

Overall, these two projects show that students of various language abilities were able to participate in this activity. Although text in the first book is significantly more complicated than in the second book, suggesting that the author of the first book is more advanced than the author of the second book, both projects successfully communicate some aspects of what these respective students experienced during their visit to Monte Albán. Furthermore, both books resist an idealized, prescriptivist form of Zapotec that prohibits any intrusion of Spanish. Instead, they represent the students' reality, which includes both languages. Author

[56]It is unclear if the title also includes *Dain Quiee niepi*, a way of saying 'Monte Albán' in Zapotec, as that text appears to be half erased on the cover of the book.

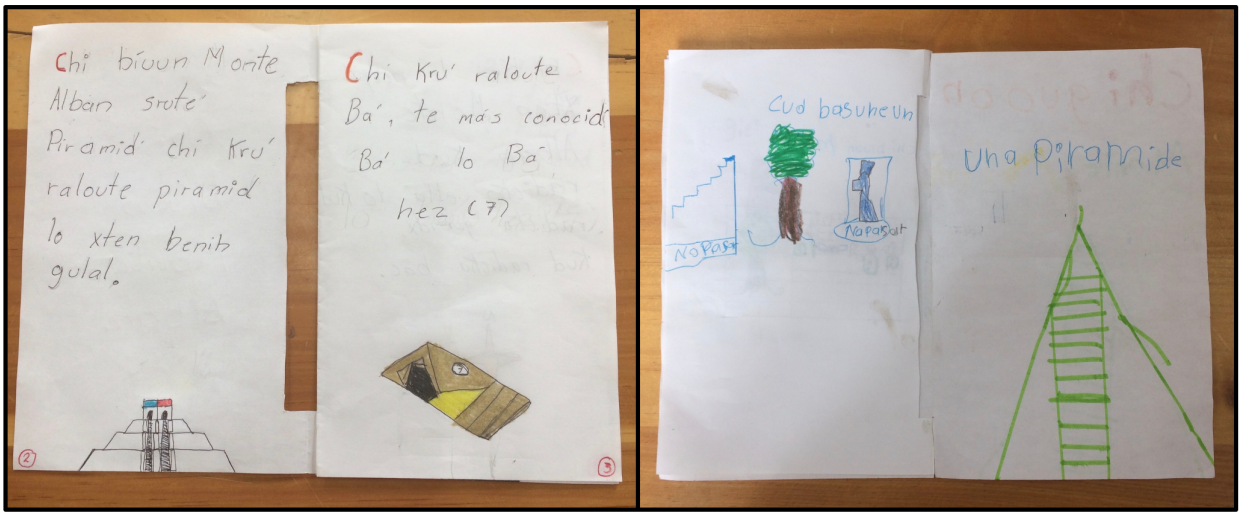

Figure 4.19: Pages from student books. Image at left is from a student who wrote mostly in Zapotec. The text reads, "*When we went to* Monte Albán, *very good pyramids and various pyramids from the ancestors. And various tombs, the most well-known tomb is tomb seven (7).*" Image at right is from a student who used both Zapotec and Spanish. Text reads "*Where we climbed.* Do no pass. Do not pass. A pyramid."

one does this by using the place names that he is aware of, even if they are in Spanish, rather than inventing new terms or using roundabout descriptive language in Zapotec. Author two does this both by naming objects in either Spanish or Zapotec, and by representing the written language at Monte Albán accurately as being in Spanish when it was posted in Spanish. These outcomes are in line with the goals of the project: encouraging students to explore their multilingual abilities to create a project that they feel proud to share with their community.

Moreover, this multilingual view of language use was carried over into other areas. For example, in the student feedback on the course (which I gathered through a written feedback survey), I presented the questions in Spanish and had an expectation that students would respond in Spanish. However, one student used some Zapotec words in his response (figure 4.20). This multilingual response to a Spanish-language prompt shows that at least this student has a multilingual view of language use through which use of both languages is possible. This represents the additive view of language learning and use that Rosita and I had hoped to promote through the language workshops.

4.7 Summary

In this chapter, I have detailed interventions that were carried out through the Zapotec language workshops for children in Teotitlán from 2017-2019. In order for the reader to

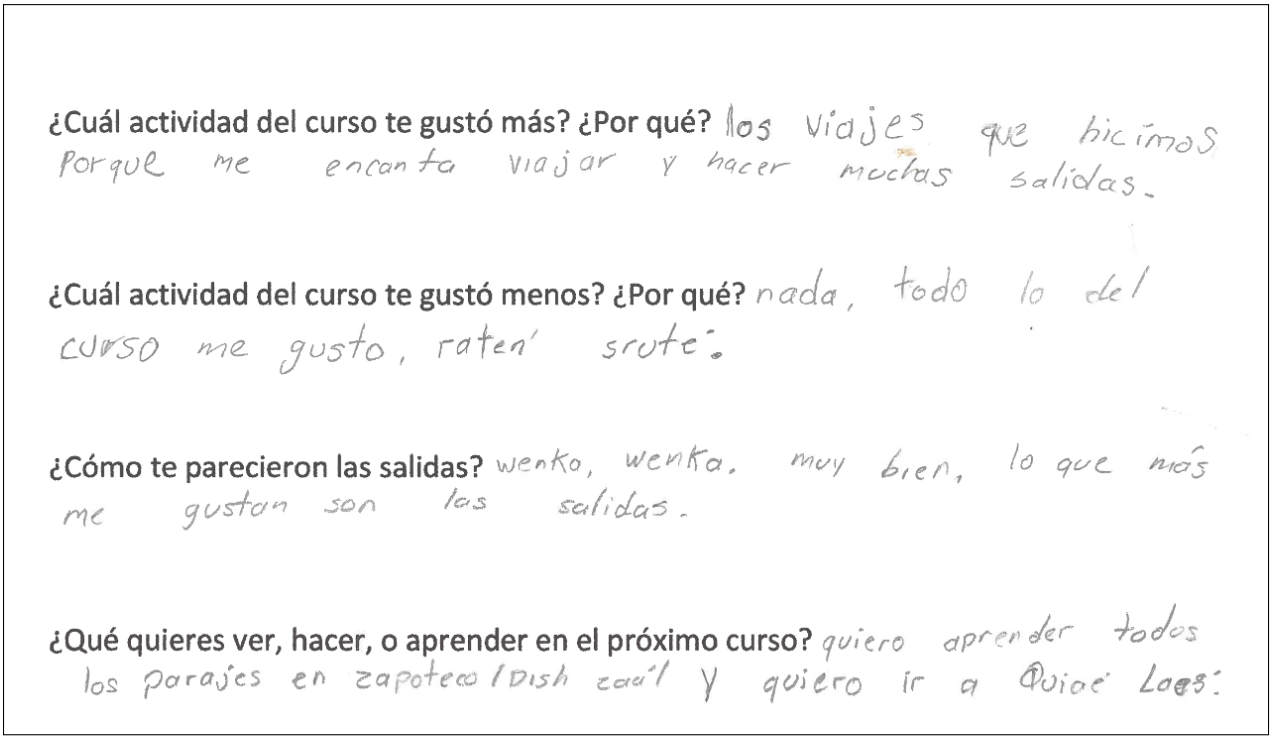

Figure 4.20: Student feedback on the course. The text reads: "**What activity from the course did you like best? Why?** The trips that we did because I love to travel and do many outings. **What activity did you like least? Why?** Nothing, I liked everything from the course. **What did you think of the outlings?** *Good, good,* very good, what I like most are the outings. **What do you want to see, do, or learn in the next course?** I want to learn about all of the waypoints in Zapotec/*Zapotec* and I want to go to *Quiae' Laes*'" Note that the questions in bold are given as a prompt; the text in regular font is the students' Spanish response and the text in italics is Zapotec response. Quiae' Laes' is a well-known waypoint in the mountains beyond Pichacho.

understand why the Zapotec workshops for children were identified as a useful intervention, I presented an overview of the network of language revitalization programs that were in place in Teotitlán at the time of the study. While Zapotec in Teotitlán is undergoing some intergenerational shift, with younger community members using increasingly more Spanish, there is nevertheless a vibrant tapestry of initiatives aimed at promoting Zapotec through an assortment of strategies targeted for different audiences. These include efforts in public schools (section 4.2.2), within the Teotitlán del Valle community (section 4.2.3), and in collaboration with efforts that go beyond Teotitlán (section 4.2.4). I argued for viewing the complementarity of these initiatives: each contributes in a different way to an overarching community goal to see Zapotec use maintained and strengthened within the community. As I illustrated in figure 1.3, I envision equitable collaboration as involving the participation of diverse stakeholders with varying amounts of commitment to different projects that suit their own interests and needs. Instead of limiting ourselves to identifying a single "best practice" or way of achieving sustainable Zapotec language use in Teotitlán, stakeholders involved in this Zapotec language revitalization project (myself included) focused on how a multitude of initiatives utilize the skills, expertise, and interests of diverse stakeholders and contribute in different ways to that goal. I also presented my understanding of the key factors affecting language revitalization (outlined in section 3.2) in the context of Teotitlán and how they relate to the goals laid out in the logic model for the Zapotec language workshops for kids. Finally, I presented some results of the Zapotec workshops, focusing on how specific methodologies resulted in students' use (or non-use) of Zapotec within the workshops. I presented a sample lesson plan, highlighting how Communication-Based Instruction was implemented, and I also highlighted the results of three specific learning activities (vocabulary learning in section 4.6.4, a field trip in section 4.6.5, and writing activities in section 4.6.6). In these three activities, I showed how students were invited to build on their existing knowledge and to work together as a community of learners supporting one another in their language learning journeys. In vocabulary learning activities, for example, students drew on both their Spanish and Zapotec language skills to play vocabulary games, and they assisted one another when they were unsure what a Zapotec word means. In preparing students for field trips, Rosita and I used strategies including repetition and selective translation to ensure that children were able to understand and participate in activities. Finally, students created identity texts—whether monolingually Zapotec or bilingually Zapotec/Spanish—that they were able to read aloud to their families and families of their classmates. Moreover, adults who listened to these books supported learners when they struggled through supplying words in Zapotec without criticizing learners' language use. The types of more public Zapotec use discussed above shows promise in terms of promoting Zapotec language *use* among children in Teotitlán. In the next chapter, I turn to a closer examination of this question of which languages are being used in which contexts in Teotitlán, and how learners' language use may be shifting as a result of the language workshops.

Chapter 5

Observed Zapotec use among learners in Teotitlán

In this chapter, I present my findings regarding Zapotec language use among participants in the Zapotec language workshops based on observational data. First, I present my observations as a participant in the Zapotec language workshops. My observations are supported by notes that I took immediately following each workshop session, as well as audio recordings of the classes and photographs of student work. In addition, 10 participants collected audio recordings of their language use. These audio recordings were intended to be Long Format Speech Environment (LFSE) recordings in which participants wore lightweight audio recording devices and recorded most or all of their waking hours over the course of one or more days. However, as will be discussed in section 5.2.1, methodological challenges presented by working with children ages 6-12 resulted in the collection of shorter and less naturalistic (by 'naturalistic,' I mean that the recordings capture language use that is similar to what would have occurred had a recorder or other observer not been present) recordings than had been anticipated. I argue that while LFSE with kids ages 6-12 presented significant methodological challenges and produced data that differs from other LFSE studies, the data that these children produced are still valuable. Particularly when paired with other data, such as reported language use (section 2.2) and researcher observations (section 5.1), LFSE data can help build a more complete picture of how language is being used by participants. It can also assist in assessing children's language proficiency by providing a semi-private, low-stress environment where children can utilize their language abilities. Moreover, LFSE recordings included some data on naturalistic parent-child interactions in Zapotec. This type of data represents an underdocumented genre of Zapotec language use which will be invaluable for future language revitalization efforts in which language learners may wish to bring Zapotec into their families through intergenerational language use (Skilton, 2021).[1]

While the data presented in this study are limited and potentially show sampling bi-

[1]However, it is possible that children's recordings will not always be available for use in language revitalization due to ethical concerns around sharing private information that may be contained in the recordings. See section 5.2, Skilton (2021), and Cychosz et al. (2020) for more discussion.

ases, I argue that they remain useful for widening our understanding of how some children in Teotitlán are using language. Most notably, some children's Zapotec use in the LFSE recordings showed a wider range of language abilities than I was able to observe in the language revitalization classroom or in more public settings. This finding lends support to the claim that increasing language use requires not only the teaching of language skills, but also the creation of spaces where learners feel comfortable using their language skills. More specifically, LFSE recordings showed that when children spoke to adults using any Zapotec (even one Zapotec word within a Spanish sentence), the adults responded in Zapotec. Thus, one key aspect in creating sustainable language use may be empowering learners to start conversations with adults using whatever emerging Zapotec skills they have. Moreover, the LFSE recording environment provided a space for Zapotec learners to perform their Zapotec language skills for an audience in a safe environment in which the learner is in control of how they perform and use Zapotec. These results will be further discussed in section 5.2, but first I will turn to a discussion of learners' Zapotec use within the classroom.

5.1 Classroom recordings

In this section, I discuss the process of recording and analyzing sessions of the Zapotec language workshop for kids. The goal of collecting this data was to better understand how children are using Zapotec in the classroom and on field trips to provide additional evidence beyond child and parent reports of language use and proficiency. Although I also consulted observational data on language use in daily life (section 5.2), recordings from the classroom involve many scenarios in which children are in a Zapotec-language environment and are encouraged to at least try using Zapotec to communicate; thus, these situations may push learners and speakers to use the full extent of their Zapotec language skills in a way that may not happen to occur in the naturalistic recordings that were gathered.[2] As will be shown in section 5.2, there are cases in which children do not use Zapotec in their daily lives even though I have observed in the classroom that they have the skills to do so.

Furthermore, I see the documentation of the language revitalization process as an important part of language documentation more generally. Choosing to document the language revitalization process addresses calls that have been raised in the literature for documentation of a wider array of speech varieties (Meek 2011, Vallejos 2016). Moreover, documentation of how children learn the language is essential in the case that children stop learning the language, then wish to restart learning again at some point in the future when working with language speakers is more difficult or impossible. Ways of teaching and learning can vary from community to community, and documenting the ways in which Zapotec speakers today transmit information to learners may provide insight for future Zapotec language revitalization efforts. If Indigenous language learners want to incorporate ways of teaching the

[2]As will be shown in section 5.2, this may be true for the long recordings that are more naturalistic, though short recordings, which are more performative, tended to show an equal or wider range of Zapotec language skills in the home as compared to the classroom.

language that have been used by language speakers, having documentation of interactions between learners and speakers can provide insight into what those interactions might look like (Skilton, 2021). While a deep understanding of Zapotec as used in the types of genres that are more often targeted through language documentation projects (such as procedural texts, traditional stories, conversations between adults, lexical and grammatical elicitation) are undoubtedly useful, so too is documentation of the ways in which adults speak to children as Zapotec learners and users.

Of course, the data that I have collected from the classroom recordings does not represent intergenerational language transmission in the home as would be more commonly sought in studies of language acquisition. In fact, a significant portion of the data collected from the classroom involved children speaking together in Spanish, or me as the teacher addressing the students in Spanish or in non-fluent (and sometimes ungrammatical) Zapotec. This is one reason why I have not only considered classroom recordings, but also day-long naturalistic recordings. But despite some 'unnaturalness' resulting from the Zapotec workshop environment, the language workshops were structured in a way that sought to maximize Zapotec language interactions between learners and speakers of Zapotec. Rosita Jiménez Lorenzo, the co-facilitator of these workshops, is a Zapotec speaker who used Zapotec with students in the classroom, and students were taken around town or visitors were invited to the class so that learners could interact for longer periods of time with a greater number of Zapotec speakers. These interactions between children and Zapotec speakers can provide important information about how speakers of Zapotec have interacted with Zapotec learners with different sets of Zapotec language skills. Furthermore, through using task-based language learning (section 3.5.1) in which learners were asked to carry out some task in Zapotec, more naturalistic Zapotec conversations were encouraged. For example, tasks such as finding out the price of something being sold in the market or learning how to use a particular herb in traditional medicine are communicative tasks that Zapotec speakers engage in with one another. Thus, while pursuing these conversations in the context of the language workshop made them somewhat artificial, they nevertheless approximated 'natural' conversations. At the same time, these recordings avoid some of the drawbacks of formal types of language fluency evaluations like tests, as the recorder is (hopefully) running in the background while participants are focused on the classroom activities at hand rather than focusing on how well they are performing Zapotec language use. Additionally, recording language use allowed us to gauge language fluency without needing to establish a standard of grammaticality against which a student's proficiency could be judged; instead, language use could be considered more holistically.

Furthermore, data such as these classroom recordings, in which participants are using both Spanish and Zapotec, can start to provide a fuller sense of the linguistic ecology in Teotitlán. The data also provide evidence against the creation of an artificially simplistic divide between Spanish and Zapotec as two completely distinct and non-overlapping languages, when in reality Teotitecos rely on all of their linguistic codes to achieve their communicative goals, often resulting in interesting patterns of code-switching and translanguaging that are also of linguistic interest, and which occur frequently throughout the Zapotec language

workshops.

In the subsections that follow, I describe the methodology through which I collected the classroom recordings. I will then present the data and my analysis of two broad types of interactions that were documented: language use during demonstrations with one Zapotec speaker in front of a group of learners and language use between Zapotec speakers and learners in small groups during outings.

5.1.1 Methodology

The participants in the classroom recordings were all of the children who enrolled in the Zapotec language workshops, as well as some adult speakers of Zapotec who were invited to participate in different Zapotec activities with the learners. All participants were given the choice to opt out of being recorded without losing any opportunities to participate in the language workshop. At first, I had considered video recording the classes, but participants were generally uncomfortable with this idea, so I decided to collect only audio recordings. At the beginning of each class session—whenever permission was given—I placed a Zoom H4n recorder in the middle of the classroom and used the external microphone to record what occurred throughout the class. When the class went outside or to other locations, I brought the recorder with us and attempted to place it where it would record the greatest number of speech participants most clearly. In cases where a Zapotec speaker was giving a presentation, I tried to ensure that their presentation could be heard clearly on the recording. I have not analyzed any data in cases where children were asked to go around and interact with a variety of speakers (such as when they interviewed vendors in the artisan market, for example), as this type of unplanned interaction made it difficult for me to get informed consent from adults who happened to be in the area and interacted with learners. Furthermore, I did not want to discourage any Zapotec speakers from speaking with the learners if they felt uncomfortable about being recorded. When outings involved a presentation by one speaker, I had to make arrangements with that individual ahead of time, which also allowed me a chance to get informed consent, introduce myself, explain the project, answer any questions, or resolve any doubts that the participant might have. In all the recordings, if anyone asked for the recorder to be paused or a recording be deleted, I did so immediately. Given that I was also the co-facilitator of the language workshops and thus responsible for managing a large group of children while also responsible for data collection, there were a few instances in which I forgot to start the recorder or failed to bring it with us during an outdoor activity. Furthermore, some audio recordings are inaudible because of noisiness in the classroom, either due to overlapping speech or to sounds such as the movement of chairs and tables. In addition to the audio recordings of each session, I also wrote notes on my classroom observations at the end of each session.

Because the classroom recordings resulted in many hours of noisy, multi-participant recordings (the classroom recordings from summer of 2019 alone are approximately 30 hours of recorded data), it has not yet been possible to completely transcribe and analyze all of the data that were collected. Instead, I selected recordings in which Zapotec speakers interacted

for longer periods of time with learners as a starting point for analysis. I worked with speakers of Zapotec, mainly Efraín Lazo Pérez, Trinidad Martínez Soza, Isabel Lazo Martínez, and Elena Sánchez López, and we transcribed these types of interactions and translated them into Spanish, using ELAN to time-align the data. In the following section, I focus on these interactions as a window into Zapotec learners' language use in more naturalistic environments within the language workshops. For a look at data on more structured aspects of the language course (such as facilitator-student and student-student interactions during classroom activities), see section 4.6.

5.1.2 Analysis of classroom recordings

The interactions between Zapotec speakers and children impressionistically fall into two groups. In one set of cases, a speaker is performing some type of talk or demonstration for the entire group of learners (and in some cases, their families as well). In another set of cases, one or more speakers is engaging with one or more students as a subset of the entire group. As I hope to illustrate below, these two contexts result in different language use by Zapotec speakers and by learners.

Language use during demonstrations. As touched upon in section 4.6.5, during demonstrations or presentations by Zapotec speakers to the full group of learners, speakers tended to monologue for longer periods of time using Zapotec, often without any speech coming from learners, or with student participation consisting of various forms of backchanneling (using phrases such as *eejih* and *aa* 'yes'). This is not surprising given the context: speakers had been asked to give some type of demonstration or explanation for the group, and thus they commanded the majority of the speaking time while providing the demonstration or explanation. In these contexts, speech was sometimes directed at other adults in the room (particularly at Rosita as both a co-facilitator and a Zapotec speaker), though there are also examples of clearly child-directed speech. For example, in one outing, the speaker engages directly with learners repeatedly, asking them simple identification questions and soliciting answers in Zapotec that are relevant to the project at hand (painting):

Speaker:	*Tons, naa xi kun, xi kolor re'e guslauan naa, tu laa kolor re'e?*
	So, with what color, with what color do I start, what do you call this color?
Students in chorus:	*Xnia.*
	Red.
Other students:	*Gots xnia.*
	Orange.
Speaker:	*Gots xnia kan. Xi kolor nain?*
	It's orange. What color is this?
Various students:	*Gots, gots xnia.*
	Yellow, orange.
Speaker:	*Antziga, xi deebih lau re'e, xi kolor nain?*

Before painting here, what color is it?
Students: *Gots. Ngits!*
Yellow. White!
Speaker: Ngits nain.
It's white.
(tdvz_class_20190725_jen_1 1:49:12-1:49:32)

Notice here that the Zapotec input that students are getting is somewhat complicated, and at least some students seem to be comprehending it. For example, the speaker is not only pointing at a color and asking what color it is (as seems to be the case when students identify the color orange in line 3), but the speaker also asks students to consider what the color of the canvas is under the paint. In order to answer that question, they rely not only on the speaker's point to a color, but also what he has said in Zapotec. This procedure of asking identification questions is repeated throughout the presentation, and students identify colors, objects, and actions. I would like to highlight another clip from this interaction, in which students identify an action, including answering the question with an inflected verb form in the progressive, *kayab* 'falling':

Speaker: *Ndee ga, xi ndee kayak re'e?*
And this, what's happening here?
Students: *Kayab niss gie'.*
Rain is falling.
Speaker: *Tu laa ndee? Tu laa ndee? Tu laa, tu laa kud kayab niss gie'?*
What's this called? What's this called? What this, what's this where rain falls?
Students: *Baa / Zaa*
??? / Pork fat
Speaker: *Zaa, zaa.*
Cloud, cloud.
(tdvz_class_20190725_jen_1 1:50:34-1:50:52)

In the excerpt above, the speaker poses a question about what is happening in the painting, and the students respond with the correct verbal marking on the verb 'to fall', *kayab*. The speaker continues, asking learners where rain falls from. Here, students try to state the word *zaa* 'cloud', but falter: one instead says *baa* (perhaps attempting to say *gibaa* 'sky'), while the others all confuse *zaa* 'cloud' with a tone minimal pair *zaa*, meaning 'pork fat.' The speaker does not criticize the learners, but simply produces the correct pronunciation for them to copy.

Furthermore, this speaker shows similar patterns to those discussed with regards to Rosita's speech in section 4.6.5, in which the speaker makes statements in Zapotec and repeats them in Spanish for the understanding of the learners:

Speaker: *Xtiuzenyubte' yubiu* pues, *badzuinnee dius yubiu balaa duxteniun.* Es una forma de decir 'bienvenidos'. *Aa,* 'bienvenidos,' *diidx gulaal nain, 'guzakte' naa badzuinnee dius yubtu' balaa.'*
Thank you very much, well, *you have arrived with God to our home.* It's a way of saying 'welcome.' *Yes,* 'welcome,' *they're old words, 'it's a blessing that you have arrived with God at this house.*
(tdvz_class_20190725 1:48:33-1:48:47)

In the above statement, the speaker first gives the greeting in Zapotec, then explains its meaning, then repeats it again in Zapotec. This allows even learners who cannot entirely interpret the Zapotec on their own to continue to follow the conversation and pick up on what they can understand.

Students also respond in both Zapotec and Spanish, depending on their understanding and abilities, as illustrated by the exchange below:

Speaker: *Tu laa, xurr reste'tu raptu vakasion na'a?*
Well, what time do you all get up now that you have vacations?
Student 1: *Rika xonn.*
At six.
Student 2: *Jali bi tiop, jali bi tiop agoost.*
Twenty second, August twenty second.
Student 3: ¿A, a qué horas me despierto? Yo a veces. la una, a las dos, a las tres de la tarde...
When, when do I wake up? Me, sometimes at one, at two, at three in the afternoon...
(tdvz_class_20190725 1:54:53-1:55:17)

This clip shows the varying levels of comprehension and production proficiency of three students. One student correctly comprehends the question, 'what time do you get up?' and responds with the Zapotec phrase *rika xonn* 'at six'. Another responds with a meaningful Zapotec phrase, *jali bi tiop agoost* 'August 22', but which seems to be the response to a different question, namely 'When does vacation end?' It seems that this child picked up on *xuur* 'at what time' as a time question, along with *vakasion* 'vacation', but did not interpret *reste'tu* 'you all wake up'. Nevertheless, the answer the child provided shows a degree of proficiency in production, as well as the confidence to speak Zapotec in the presence of both peers and adults. Finally, the third child shows comprehension of the question, though perhaps not confidence in their comprehension skills, as they repeat back the question in Spanish, 'When do I wake up?' before answering in Spanish.

Overall, the language used during demonstrations shows a pattern in which the speaker generally dominates the discussion, while allowing for and facilitating student participation to different extents by asking learner-directed questions and using Spanish to repeat key components of the discussion. This pattern generally held across different demonstration

sessions, though some Zapotec speakers engaged more with children while others monologued more. Furthermore, some speakers spent more time using Zapotec while others more frequently switched into Spanish explanations. Impressionistically, speakers who were more balanced bilinguals tended to speak more Zapotec with children. Those who showed Zapotec dominance tended to use Zapotec, then switch to Spanish at times when children did not understand; those who showed a possible preference for Spanish similarly shifted to Spanish with the children in many situations. Those who seemed to have more equal confidence in the two languages, on the other hand, seemed to more frequently persist in using Zapotec even when misunderstandings were occurring. During these interactions with speakers, learners relied on the range of language skills that they have in both Spanish and Zapotec: some Spanish responses illustrated learners' comprehension of a Zapotec question; some Zapotec responses suggested that students had not fully understood a Zapotec question but nevertheless leveraged their Zapotec language skills to attempt a response; and other Zapotec responses demonstrated both comprehension of the question and ability to respond fully in Zapotec.

Language use with Zapotec speakers in small groups. Here I will focus on data from a transcribed recording in which an adult and two children are conversing in Zapotec while we are walking in the countryside on our way to a well-known 'paraje' ('waypoint') on the outskirts of Teotitlán. I am also present, holding the audio recorder. This recording is perhaps unrepresentative of small group interactions; it certainly struck me as unique among the recordings that I collected. However, I was rarely able to collect small-group recordings with adult Zapotec speakers and children, as adults would often engage me in conversation in these situations, so it is not clear whether similar interactions may have occurred without my recording them. Nevertheless, I find this interaction particularly important, as it shows how—at least in the case of these two students—my impression of their Zapotec language abilities based upon other observations I had made or recorded in the classroom underestimated their Zapotec abilities. In larger group settings where many learners were present, and in one-on-one interactions with me, learners used simpler Zapotec language than was later recorded in this small group setting.

Unlike in the larger group setting, where many responses were either one word or a short phrase, often without verbs, in at least this small group setting, responses were frequently full phrases with inflected verbs, as exemplified below:[3]

Speaker:	*Xi dibuj runiu tlau, Gerardo?*
	What designs do you make, Gerardo?
Gerardo:	*Xi nau?*
	What?
Speaker:	*Xi dibuj runiu?*
	What designs do you make?
Gerardo:	*Chi'inte' dibuj.*
	Little designs.

[3]Names have been changed to protect children's privacy.

Speaker: *A zekia?*
Really?
Eduardo: *A baniu te* Mickey Mouse?
Have you made a Mickey Mouse?
Speaker: *Lui ga? A runiu greek?*
And you? Do you make frets?
Eduardo: *Eejih.*
Yes.
Speaker: *A ruinchei xtaadu?*
Does your dad weave?
Eduardo: *Uh, uh, naazia kon xnaantie'*
No, just me with my aunt.
Speaker: *Per nee xnaantiu bayo'on?*
But with your aunt, right?
Eduardo: *Eejih.*
Yes.
Speaker *Rak ruincheian.*
She can weave.
Eduardo: *Laan baluiyan naa...per kedih bato'odin.*
She taught me...but I didn't sell it.
(tdvz_class_20190805_jen_1 53:53-54:23)

In this excerpt, the conversation between the adult speaker and the two children, Gerardo and Eduardo, is more balanced in terms of turn-taking. The children respond in full phrases that require inflection of verbs for tense/aspect as well as person agreement. Both Gerardo and Eduardo successfully use the second person marker *-u* in their questions to others (*nau* and *baniu*), and Eduardo also uses the third person *-an* along with the past tense marker *ba-* in *baliuyan* 'she taught'. Although Gerardo does not respond, it is notable that Eduardo asks a question in Zapotec directly to Gerardo—another child. This was quite rare based on my participant observations and revision of the recordings, but as demonstrated here, child-to-child Zapotec speech is certainly possible given the Zapotec language abilities of some of the children.

As was also the case in the larger group, children sometimes have difficulties with pronunciation, particularly with minimal pairs:

Eduardo: *Zeinte' giizh gulee.*
I took out a lot of garbage.
Speaker: *A, ziente' giixih.*
Hm, a lot of weeds.
Eduardo: *Giizh.*
Garbage.
Speaker: *Giixih,* porque *giizh* es 'basura' y *giixih* es 'hierba.'

> *Weeds,* because *garbage* is 'garbage' and *weeds* is 'weeds.'
> (tdvz_class_20190805_jen_1 1:04:22-1:04:33)

In this segment, Eduardo attempts to say that he did some weeding, but he mispronounces the word for 'weeds' and instead says 'garbage.' The speaker first tries to gently correct him by repeating the correct pronunciation, but after he keeps pronouncing 'garbage', the speaker makes the correction explicit, noting the difference in meaning. Despite this correction, the conversation continues in Zapotec, with Eduardo seemingly unbothered by the correction he received.

Overall, in this smaller group setting, all participants seemed to be more comfortable with one another and freely use Zapotec. The learners experimented with using new phrases, at times hesitating, repeating, and correcting themselves. Despite some difficulties in communication, they persisted in their use of Zapotec with one another. Furthermore, the children engaged in dynamic conversation using Zapotec, including incorporating common phrases of agreement and disbelief while they gossiped with the adult speaker.[4] The children seem to be playing the role of adult Zapotec speakers, as they speak together about adult topics, such as farming, artisan work, and even government jobs. Furthermore, the adult speaker commented on the way in which this conversation involved a type of role-play for the children in a casual conversation with me at a later point in time. It seems, then, that the Zapotec workshops provided a space where students could practice *becoming* Zapotec speakers by providing an environment where learners could practice, make mistakes, and use Zapotec without being judged for their performance or having their identity as Zapotec people called into question.

Conclusions. In contrast to the more simple, one-word answers involving uninflected nouns and adjectives that characterize the majority of responses in the larger group setting, in the smaller group setting, students revealed a much wider array of language skills. These differences in Zapotec use in different circumstances may help shed light on the variation in how participants reported their perceptions of Zapotec language use, discussed in section 2.2. The fact that children generally used more limited Zapotec—and utilized less advanced Zapotec skills—in larger, more public group settings may impact perceptions of Zapotec language use among children. Furthermore, these patterns are consistent with the common thread of commentary I have received from children and adults that they worry about being judged for how they use Zapotec if they speak it publicly. In the smaller group settings, it seems, this pressure was reduced, and children were more comfortable exercising a wider range of their Zapotec language abilities. These environments allowed Zapotec learners to practice taking on the role of Zapotec speakers in a way that supports learner investment: in these spaces, learners were not punished for mistakes, but were encouraged to continue learning and adding to their Spanish and Zapotec linguistic repertoires. Adult Zapotec speakers, in both large and small group settings, helped to facilitate a safe learning

[4]While the language involved in the children's gossiping is very interesting, I do not present it in any detail here to preserve the anonymity of participants.

environment by gently correcting 'mistakes' or mispronunciations in learner's Zapotec rather than by highlighting or criticizing failed attempts at Zapotec communication. In the next section, I examine how learners' language use in the classroom compares with their language use in other naturalistic settings.

5.2 Naturalistic recordings

In addition to the classroom recordings, let us consider what naturalistic recordings of children can tell us about Zapotec use among children in Teotitlán at present. Naturalistic, day-long recordings, or 'long-format speech environment recordings' (LFSE), are an increasingly common form of data used to analyze child language acquisition, and, in some studies, adults' language use (Casillas & Cristia, 2019). In LFSE, participants are asked to record themselves for relatively long periods of time (usually during all of their waking hours on one or more days) using lightweight audio and/or video recorders. The present study is unique in two ways. First, it falls somewhere in between the previously mentioned two groups of studies on child language acquisition and adult language use. Child language acquisition studies usually focus on young children's acquisition of their first language, from birth to around age three, while adult studies look at individuals over the age of 18. In contrast, the data I present here were collected from children between the ages of six and twelve years old. Furthermore, most previous work has focused on speakers and learners of large languages such as English and Spanish, while this study focuses on a relatively small language that remains underdocumented.

Despite these differences, the main benefits of using naturalistic, day-long recordings that are cited for use with young children and adults in majority language groups still hold for older children in a minoritized language context. As Casillas and Cristia (2019) describe, new technologies such as small, portable audio and video recorders—along with increased data storage capacities and automated audio and video processing—make what was once a near impossible quantity of work in data collection and analysis now more feasible. Furthermore, the type of data that can be collected through LFSE is exactly the type of data that is needed to understand how language acquisition works in practice, in a 'natural' environment rather than in the more artificial settings that have traditionally been used as a source of data, such as recording in a lab or during a specific time of day or activity. This is especially important in the context of understanding Zapotec language acquisition and use among children in Teotitlán. As I have suggested in the preceding sections, children's language use is not simply based on linguistic abilities, but rather can be greatly affected by the situation, including who is observing the interaction. Thus, the analysis of naturalistic recordings during which the participant is not focused on the fact that they are being recorded or observed by an outsider, and which provide insights into a fuller set of contexts and interactions, may provide a unique picture into language use in domains such as the home, which can be a key place for sustainable language transmission to take place.

At the same time, there are some important drawbacks to consider before undertaking

this type of data collection. The biggest consideration is the invasion of privacy and confidentiality that day-long recordings entail (Cychosz et al., 2020). Participants are recording their own voice, which makes them identifiable even if all the associated metadata is anonymized and any potentially identifying statements are removed from the audio recordings. While voices can be altered to help preserve the speakers' identities, this also results in the loss of important linguistic information, particularly at the level of phonetics. Furthermore, participants are recording everything they do throughout the day, which may include accidental capture of embarrassing moments (such as using the restroom) or upsetting activities (such as reprimanding children). The same technological advancements that make longform data collection plausible and ecologically valid—namely, the availability of small, unobtrusive recorders—amplify the potential violations of privacy as participants may forget that they are recording themselves (Cychosz et al., 2020).

It is also important to consider complications presented in terms of achieving informed consent when working with children. As I will discuss in section 5.2.1, some children seemed to have a difficult time fully understanding how their data would be used. Even when every effort is made to explain the purpose of the research at a comprehensible level, there are some aspects that can be difficult for a child to grasp, and it is not always immediately apparent to the researcher when a child has not completely understood the explanation provided. Of course, parents of child participants must also provide assent for their children to participate, and explaining the research process is more straightforward with adults. At the same time, complications have arisen in this case when parents were not comfortably literate in the kinds of "formal Spanish" that are required by Institutional Review Boards, or were not familiar with concerns related to privacy and confidentiality if data were to be available on the internet. In Teotitlán, where internet connectivity and advanced technological literacy are becoming increasingly common, the risk of a lack of fully informed consent with regards to data storage and the internet among adults is decreasing, but it remains a concern at present. Cychosz et al. (2020) also highlight the potential risk of the study results revealing "aspects of family/community life that conflict with how communities would want to be portrayed," that are "unflattering," or that present findings based on a non-representative sample that is then generalized to the population at large.

Fortunately, participatory action research provides potential solutions to some (but not all) of these problems. When a more diverse set of people are invited to participate in the research process, discussion among the group can help to clarify misconceptions that would result in consent being anything less than fully informed. Furthermore, when everyone who is involved in the process is given a chance to provide feedback on the research, results that conflict with how a community may wish to be portrayed or may be considered "unflattering" can be identified. This does not mean that such results will be suppressed. Rather, it may become clear that some oversight was made in data collection or analysis that resulted in a biased conclusion, or community perceptions of how "unflattering" a conclusion is may change upon discussing and analyzing the data more closely. It may be agreed upon that the same results could be framed in a different way that is more consistent with community desires; this importance on framing has been discussed at length in the literature on language

revitalization specifically (Hill, 2002; Leonard, 2012; Nash, 2012; Perley, 2012, 2013), and in work with Indigenous communities more generally (Deloria, 1969; Tuck, 2009). Finally, PAR relies on inclusion of all stakeholders, which will serve to protect against collecting data from a non-representative sample of the population.

However, issues of privacy and confidentiality are not addressed by PAR. In fact, participation of a larger group of individuals in the research process may exacerbate these risks. As more people interact with participants' data, the chances that someone may recognize who the participant is increases. Furthermore, in this study, LFSE participants were involved in other aspects of the research process as well and have come to know one another quite closely; this makes it very likely that they will be able to recognize a participant's identity based only on their voice recordings. I will address the steps that I took to protect participants' privacy and confidentiality in light of this in the methodology section below.

Despite the potential risks and drawbacks that LFSE presents, the types of data that LFSE recordings can supply are uniquely useful in language revitalization contexts. They provide insight into the daily interactions of Zapotec speakers and learners that can be used as a basis for language revitalization in a way that more formal, controlled recordings cannot. They may reveal the types of interactions that are rarely recorded during elicitation-based language documentation, such as ways of instructing and soothing children that are often among the first types of expressions that families hoping to bring languages back into there homes want to learn. Though the data and analysis that I present below do not yet dive into the linguistic specifics of what has been captured in these recordings, the potential that the data hold for the future is significant. For now, let us consider the details of how these data were collected and what they can tell us about patterns of Spanish and Zapotec language use in Teotitlán at present.

5.2.1 Methodology

Participant recruitment. In the pilot phase, children were recruited for participation in the LFSE recordings via radio announcement. As also occurred in the case of the reported language use interviews, this recruitment method was not very successful. Subsequently, I recruited children who had participated in, or who planned to participate in, the Zapotec language workshops for participation in the study. I explained that I was interested in learning more about how kids in Teotitlán use all of the languages that they know—Zapotec, Spanish, English, or any other language—and that was why I was asking children to record their speech throughout the day using a small audio recorder.

Participants. In summer 2019, I collected data from 10 participants, ages 6-12 (median age 10.5; 6 male, 4 female[5]). As in the interviews, some individuals came from the same household. This often resulted in the collection of two recordings of the same conversation,

[5]In using the terms 'male' and 'female,' I am reporting on these individuals' perceived gender from my perspective. Unfortunately, I did not ask participants to self-identify their gender as has been recommended in the literature (Zimman, 2017). However, the gender I report for participants matches with the grammatical gender agreement that participants and their family members used to talk about each participant.

one from each participant. For that reason, I have decided to present data on one participant from each of the six family units (3 male, 3 female) to avoid representing what is essentially the same data twice. Nevertheless, I will provide some comments on observations regarding slight differences between individuals within the same family unit. Participants also completed interviews (discussed in section 2.2). Based on their reported language use, one participant was Zapotec dominant, four used some Zapotec, and one used no Zapotec. In their self-reports of language proficiency, all reported that they speak Spanish and Zapotec (though one mentioned speaking only a little Zapotec and one mentioned speaking Spanish 'more'); three also mentioned some English abilities. Furthermore, all six participants reported Spanish and Zapotec speaking parents; one also mentioned their parent speaks some English.

Procedure. Participants were given a t-shirt with a special pocket sewn into the center of the shirt that was large enough to fit a Zoom H1 sound recorder (figure 5.1). I showed participants how to start and stop the audio recorder, then I verified that they could perform this process on their own. We discussed the possibility that a participant might record something that they didn't want to record (such as an embarrassing conversation, or a time they used the bathroom). Participants were encouraged to turn off the audio recorder during any parts of the day that they didn't want on the recording. Participants were asked to wear the special t-shirt with the Zoom H1 sound recorder in the pocket during the entirety of their waking hours. They were invited to participate in up to two days of recording before or during the workshop and two days after the workshop. Ideally, I would have recorded two days before the workshop and two days after, but because of difficulties in participant recruitment, some participants recorded their first two days after they attended the workshop, as they found out about the study through participation in the Zapotec workshop. At the end of each recording session, I also invited participants and their guardians to advise me if there was anything that they wished to erase. A few participants wanted to listen back through their recordings to see if anything should be deleted, and I happily obliged, in keeping with recommendations for best practice in ethical LFSE data collection (Cychosz et al., 2020).

In terms of the data itself, I also aimed to apply recommendations of best practice in the literature (Casillas & Cristia, 2019). Unlike previous studies focusing either on early childhood language acquisition or on adult language use, participants in this study were children ages 6-12. This demographic of children is significantly different from both young children and adults in ways that fundamentally altered the type of data participants created. Child participants in early language acquisition studies (who are often under the age of 3) are largely unaware of their participation in this type of study, both in their inability to comprehend the purpose of such study, and in their tendency to forget that they are wearing a recorder. Adults, on the other hand, can comprehend the purpose of the studies in which they participate. If they feel comfortable participating, they likewise often pay little attention to the recorder and will go about their day as normal. The children who participated in this study fall between those two groups: they are old enough to understand the basic premise of the study in which they are participating, but they are, for the most part, not mature enough to understand the details of how their data will be used or the motivations

Figure 5.1: Child (at left) wearing a special t-shirt for day-long recording while on a Zapotec class field trip

behind doing this type of research. For example, I explained to participants that only I or other researchers who are trained in handling this type of data would listen to their recordings, and that we would not react negatively to anything that they might consider embarrassing if a parent were to hear it (such as telling an inappropriate joke or making a rude comment). However, some participants found a great deal of their daily activities to be private or potentially embarrassing, and thus recorded only small segments of their daily activities. Furthermore, participants tended not to forget about the recorders, as the special t-shirts (although perceived as 'cool' by at least some participants, who proudly wore them to field trips and other outings) were often commented on by others, reminding participants of the recorders. For this reason, some participants preferred not to wear the shirts, carrying their recorder by hand or mounting it elsewhere, such as in a purse or other pocket. This, of course, negatively affected the audibility of the recordings. It also made it difficult or impossible in many instances to identify which voice corresponded to the study participant and which voices belonged to other children in the environment. However, it was essential for

me to allow participants to feel as comfortable as possible while participating in the study, so participants were encouraged—but not required—to wear the shirts.

A further result of children not fully understanding the purpose of the study is that some participants seem to have focused their recordings on cases where they were speaking Zapotec. In some instances, this includes children apparently performing for the recorder, doing activities such as monologuing, rehearsing a dialogue with a sibling, or singing in Zapotec. Some participants, when reviewing their recordings, suggested that recordings containing Spanish should be erased since they understood the purpose of the project to be related only to their Zapotec language use. This clearly indicates that my explanation to participants was insufficient for them to understand that I hoped to record their full range of language use—in Zapotec, Spanish, and any other languages. This could be, at least in part, because of my role as a teacher in the Zapotec language workshops and the fact that I am generally known by both participants and other community members to be someone who promotes the Zapotec language. In each case where a misunderstanding seemed to have taken place, I attempted to further explain the purpose of the study to the participants. Nevertheless, the recordings that participants gave permission for me to analyze often contain instances of apparent performances rather than spontaneous speech, even after children had participated over multiple days and had multiple conversations with me and their parents about the study. This suggests that either I failed to sufficiently explain my goals, or that participants weren't interested in simply behaving "naturalistically" around the recorder, but rather preferred to continue recording performance-style speech (or perhaps both).[6] This may represent participants' desire to use the LFSE recordings as a space in which they felt authorized to use Zapotec and to practice becoming Zapotec speakers; I will discuss this possibility further in section 5.3. Finally, my participation could have affected participants' willingness to record their full days out of fear of embarrassing themselves in front of me in my capacity as their teacher.

These potential complications had a significant effect on the amount of data that was collected through attempted day-long recordings, as most participants recorded only a small fraction of their day. Despite these methodological challenges, the benefits of LFSE remain. Although this method resulted in a smaller quantity of recorded time than expected (which could have been about 400 hours of recordings), it nevertheless resulted in a significant quantity of data (over 70 hours) which provides insights both into the instances of naturalistic language use that are captured, as well as the children's overall Zapotec language abilities as displayed in shorter, more performative recordings. Furthermore, LFSE recordings document key aspects of language socialization and use that are not typically part of documentation projects which often focus on adult speech in formal settings rather than the child-directed speech that is crucial for intergenerational language transmission (Meek, 2011; Vallejos,

[6]It seems that the latter may be true, as in some cases, participants recorded mostly performative Zapotec speech during the first set of days recording, then recorded a combination of performative and naturalistic speech in the second set of days recording. This suggests that my explanation of the purpose of the study between the first and second set of recordings did help to clarify things, but participants continued wanting to record their Zapotec performances.

2016). In order to bring languages into the home for use between parents and children, it is useful to have a robust record of how parents and children use the language that future learners can use as a resource, and this study shows that LFSE can provide at least some such data.

Finally, the presence of apparently performative recordings of children using Zapotec suggest that the LFSE recordings potentially served to create a space in which participants were authorized to use Zapotec, and as a result used Zapotec more freely than in other contexts where they may fear that their Zapotec language use will be judged by others. The space created by the LFSE recording process allowed for participants to use Zapotec in a new context, contributing to increased used of Zapotec among participants overall. These results suggest that LFSE recordings may have an additional benefit of creating an additional context for language use that can contribute to language revitalization.

5.2.2 Results and analysis of LFSE recordings

One significant consequence of the methodological challenges presented above is that the data collected were non-uniform. The recordings can be roughly categorized into two main types, which I will call *long* and *short recordings*. The long recordings are more similar in nature to typical LFSE recordings, featuring uninterrupted recordings as long as several hours, while the short recordings are much shorter (in some cases, only a few seconds). Moreover, the long recordings feature large stretches of silence and ambient noise, as well as conversations between various individuals in which participants may or may not participate. The short recordings, on the other hand, are almost exclusively either participant speech or conversations between the study participants. Finally, these short recordings, as will be discussed in subsection 5.2.2.2 below, are qualitatively performative in nature, documenting instances of children practicing their Zapotec language skills. The presence of the recorder and participants' understanding of the goals of the study—for me to record their Zapotec language use—seem to have created an environment in which participants considered themselves authorized to use Zapotec, and as a result they practice their Zapotec language skills for the recorder.

For the purposes of this paper, I consider recordings longer than 10 minutes to be *long recordings* and those shorter than 10 minutes to be *short recordings*. I have chosen 10 minutes as the cutoff because most recordings shorter than 10 minutes appear to contain performative speech in which the participant speaks to the recorder. While there are some recordings longer than 10 minutes that feature some such performative speech, there are many recordings of 10 or more minutes that do not and which are qualitatively similar to the longest recordings in that they contain long stretches of silence or speech between people other than the participants as well as environmental noise like TV and radio.

While it may have been ideal to separate the recordings based on whether they were or were not performative, creating criteria to separate the recordings based on qualitative standards alone proved difficult. Determining whether or not language was performative was particularly difficult without access to visual aspects of the scene, such as whether or not the

participant was focused on the audio recorder or was simply speaking aloud while playing on their own. For example, while some performative recordings were easy to identify (such as when participants repeatedly recorded similar recitations, or uttered things like, "take two"), other recordings featuring monologues could have been either performative, or naturalistic recordings of a participant playing independently and talking to themself. For that reason, I rely on a quantitative cutoff of 10 minutes to distinguish short and long recordings. In the following subsections, I analyze the data from both of these categories of recordings.

5.2.2.1 Processing and analysis of long recordings

I sampled a five second segment beginning at the 15-second mark of each minute for all recordings over 10 minutes for which I was not present.[7] Each clip was then labeled as containing or not containing speech. In clips containing speech, I annotated the clip with who was speaking and in what language. I distinguished whether speakers were the participant, adults, or other children.[8] If I felt that I could not confidently determine the quantity or identities (i.e. participant vs. adult vs. other child) of the speakers, or the languages they were using, I discarded the clip. In this paper, I present data from six of the ten participants, providing one participant's data from each household that participated in the study.[9] This procedure resulted in 1676 total clips, of which 784 contained speech that was tagged for language and participants.

Table 5.7 provides a quantitative overview of the data, in which several points stand out. First, participants varied greatly in how much time they chose to record, with Daniel[10] creating 16 recordings with a combined length of over 16 hours and Leo creating only one 28-minute recording.[11] Given that the data are quite limited, it is difficult to form any conclusive generalizations, though I will make some limited observations. First, participants' language input from adults is in Spanish a minority of the time for four out of the six participants. Furthermore, Yessica, who had the lowest amount of exposure to Zapotec from adults in her

[7]Given that the participants in this study also participated in sociolinguistic interviews I conducted, they had heard me give spoken metadata for those recordings. Some copied that format, making statements along the lines of, "Today is August 10. I am (Name) and I am here with (Name) to record." As a result, the first 15 seconds of some recordings contain very similar statements in Spanish. Some participants also turned on their recorder during my interviews with them or their family members, and I have not included that data in my analysis.

[8]In many cases, I was able to identify whether the voice was or was not the participant with some confidence, as I know all of the participants well through their participation in the Zapotec workshops. I labelled other voices as children or adults based partially on whether I recognized them as the voices of other children that I know, as well as based on my impressions of the age of the speaker. Thus, these categories are based on my impressions rather than the self-identification of speakers on the recordings.

[9]I have included data from one participant per household given that in many cases, participants from the same household produced nearly identical recordings. Siblings often turned on both recorders simultaneously in the same place.

[10]All participant names are pseudonyms.

[11]Leo created other recordings, but all were less than 10 minutes long and will be discussed in the next section.

	Participant			Adult			Child			Clips
	Z	**S**	**%Z**	**Z**	**S**	**%Z**	**Z**	**S**	**%Z**	
Daniel	49	104	32%	53	57	48%	0	6	0%	993
Giselle	2	7	22%	121	59	67%	0	20	0%	242
Yessica	0.5	90.5	0.5%	14.5	44.5	25%	0	56	0%	195
Osvaldo	24	18	57%	16	3	84%	2	8	20%	153
Elena	1	20	5%	12	9	61%	0	11	0%	65
Leo	1.5	4.5	25%	14	3	82%	1	1	50%	28

Table 5.7: Quantitative analysis of clips from long recordings. Z and S represent the count of instances of Zapotec and Spanish spoken in a clip respectively; %Z represents the percentage of total instances that Zapotec was spoken for that individual type. For example, the "Adult Z" of 53 reported for Daniel means that there were 53 instances of an adult speaking Zapotec in a clip. "Adult Z%" of 48% indicates that those 53 instances made up 48% of all adult speech in Daniel's recordings. To calculate percentages, I counted each instance of an individual speaking in a given language in a given clip as a quantity of 1. If an individual used both Spanish and Zapotec, I counted that as 0.5 for each language. The total counts of speech used by participants, adults, and other children in the recordings are the sum total, and percentages are calculated from that. Clips are the total number of clips from recordings over 10 minutes created by each participant. "Participant" means the participant was speaking; "Child" means that a child other than the participant was speaking.

environment, may be an outlier; she had only recently returned to Teotitlán after having been raised in another town where Zapotec was not widely spoken. Her history outside of Teotitlán may have impacted her Zapotec exposure and patterns of language use within her family. Nevertheless, all participants recorded instances of Zapotec being spoken by adults in their environment, indicating that all participants had access to at least some Zapotec language input.

In contrast, participants' language output is heavily skewed towards Spanish. Five of the six participants speak Spanish in a majority of clips where they are speaking. In the case of Osvaldo, the one participant who speaks Zapotec in a majority of his speech clips (57% of the time), one of his five recordings (representing 21 of his 64 speech clips) while over 10 minutes in length is qualitatively similar to the short recordings, as in it he recites items from semantic categories like body parts, plants, numbers, colors, and verbs out loud to himself in Zapotec. In addition, children's language use with one another takes place overwhelmingly in Spanish. For four of the six participants, none of the speech from other children is in Zapotec. These quantitative results have implications for future language revitalization work, as they suggest that despite exposure to Zapotec, children are not using the language. Thus, future revitalization efforts may wish to consider not just teaching or

increasing children's exposure to the language, but also promoting and supporting language use, particularly between children.

Qualitatively, participants in the recordings can be heard participating as active over-hearers of speech between adults, as they agree and disagree with adults using phrases like "uh-huh" and "uh-uh" that signal agreement and disagreement respectively in both Spanish and Zapotec. The conversations to which participants are exposed include both monolingual Zapotec and bilingual Spanish-Zapotec conversations between adults. Participants' active participation (even as over-hearers) suggests that they have at least some level of Zapotec comprehension. There is also some monolingual Spanish adult conversation in the recordings, but it is largely at an event outside of the home. This fits with the findings from reported language use that Zapotec may be used in familiar and home settings more often than in public settings.

Parents use both Zapotec and Spanish with their children in the recordings. However, children respond overwhelmingly in Spanish. There are also instances of parents actively teaching Zapotec to their children as well as passing down their linguistic ideologies, engaging in activities like explaining to their children why Zapotec is important. In one case, this involved the parents asking the participant to repeat (in Zapotec) the phrase "I like to learn Zapotec because I'm from Teotitlán," and thus both teaching Zapotec language and socializing their child into beliefs about the links between being from Teotitlán and speaking Zapotec.

While most participant responses were in Spanish, children did incorporate some of the emergent Zapotec skills that they do have in conversations with adult Zapotec speakers. For example, participants produced Spanish words that had been phonologized into Zapotec:

> me costó *dineer*
> it cost me *money*

In this example, a child was conversing with his parent when he uttered the sentence above, in which he took the Spanish 'dinero' and pronounced it following typical phonological processes for borrowing words into Zapotec, *dineer*. Interestingly, after uttering this sentence, produced largely in Spanish, the parent followed up by suggesting that the child could use the Zapotec word for 'money,' *medih*. It seems that the child's phonologized borrowing was interpreted as indicating an interest in learning and using Zapotec. Thus, by using the phonologized Spanish loanword, the child was able to engage his parent and further his learning of Zapotec.

Similarly, another participant was being addressed by an adult in Zapotec, and the child used a code-switch, inserting the Zapotec word for 'green' into an otherwise Spanish utterance:

> con uniforme verde, con uniforme *bixui*
> with a green uniform, with a *green* uniform

In this example, the child first responds with a monolingual Spanish phrase, but then repeats it and code-switches the Zapotec word for 'green' into the Spanish sentence. I find this example to be illuminating as it shows a case where a child was able to use his emerging Zapotec language skills (even though it involved using only one, uninflected word in Zapotec). Following this utterance, the adult continued addressing the participant in Zapotec.

Crucially, in all of the cases that I was able to hear in the recordings, if a child initiated a conversation using any amount of Zapotec—whether a full Zapotec phrase, a code-switched Zapotec utterance within a Spanish frame, or a Zapotec-phonologized borrowed word from Spanish—they received a response from their parent in Zapotec. On the other hand, if the child responded in Spanish, the adult sometimes responded in Spanish, and sometimes responded in Zapotec. This suggests that one crucial aspect of building sustainable language transmission is empowering Zapotec learners to begin conversations with adults in Zapotec using any Zapotec language skills that they may have. As will be shown in the following section, the participants in this study showed notable abilities in their Zapotec language production when they recorded themselves privately, though these abilities were not always apparent in more public spaces like the Zapotec classroom or in conversations with adult Zapotec speakers. Thus, for language revitalization projects to result in more widespread language use among children in Teotitlán, those projects may need to have a greater focus not simply building language skills, but rather building learners' investment in *using* their language skills.

5.2.2.2 Processing and analysis of short recordings

Unlike long recordings, which were generally more naturalistic, short recordings were generally performative in nature. These performances may represent instances of children rehearsing and practicing their Zapotec skills, which may prepare them for future use of Zapotec in more spontaneous interactions. These recordings featured instances of children listing words from domains covered in the workshops (such as colors, animals, and verbs), as well as songs, monologues, and dialogues between children. The monologues and dialogues seem to be performative in nature, as they were often rehearsed and recorded repeatedly, as highlighted by one participant's introduction in a recording:

> Segunda toma. Maestra Julia Nee *rului, ruluian, chuulmaate' ruluian.*
> Take two. Teacher Julia Nee *teach, teaches, in a very cool way she teaches.*

In this example, the participant indicates that this utterance is rehearsed by calling it 'take two.' This example also highlights the complication of my dual role as teacher and researcher, as this monologue is not only performative, but also mentions my status as a teacher.

Similar performances can be found in conversations among children. In the example below, a group of children is having a conversation in Zapotec, but when one participant doesn't know what to say in Zapotec, another assists him by suggesting (in a whispered voice) what to say:

Mario:	*Xa yu'u?.*
	How are you?
Giselle:	*Guenka. Lui ga? Xa yu'u?*
	Good. And you? How are you?
Mario:	*Guenka.* [Pause]
	Good. [Pause]
Giselle:	*Kayaua tu laa* manzana. *Lui ga? Xi kayau?*
	I'm eating an apple. *And you? What are you eating?*
Juan:	Sí, es cierto, *'Ketchidi.'*
	Yes, it's true, *'Nothing.'*
Mario:	*Ketchidi.*
	Nothing.

Again, this conversation seems to be performative. For one, the topic is perhaps unexpected. Giselle is narrating what she's eating, despite the fact that she is audibly eating an apple, and there is likely no confusion on the part of Mario what she's eating. Furthermore, there is a long pause between the opening 'How are you?' and the discussion of what they're eating, as if Giselle is thinking of what she might ask about in Zapotec. Finally, when Giselle asks Mario what he's eating, he isn't sure how to respond, and falls back on help and encouragement from Juan, who supplies the answer of 'nothing' in Zapotec.

While these short recordings are performative, they are nevertheless helpful in providing insight into learners' language abilities. The Zapotec produced by some participants includes forms that were not covered in the workshops. Some participants integrated vocabulary acquired elsewhere (such as *chuulmaate'*) along with verbal forms that had not yet been practiced in the classroom (such as the progressive *ka-*). In the case of verbal forms, moreover, some participants produced the progressive verb forms with their enclitic person markings as would be expected for an adult speaker, indicating that they have productive control of such forms. This sophisticated use of Zapotec language in these seemingly performative recordings suggests that at least some participants have significant abilities in Zapotec; however, they may nevertheless wish to practice those Zapotec skills and gain comfort in using the language in a controlled environment (such as the LFSE recordings provide) before using those skills in more public settings.

5.2.2.3 Comparison with reported language use and researcher observations

The comparison of LFSE data with reported language use (section 2.2) presented in table 5.9 shows, generally, an underreporting of exposure to Zapotec, as 5/6 participants and 4/5 parents reported less exposure to Zapotec than was recorded in the LSFE data. Only Giselle and her parent reported Zapotec dominance in both hearing and speaking; however, her observed speech was only 22% Zapotec. This is notable because Giselle demonstrated creative use of Zapotec in the recordings. Interviews with her and her parents suggest that she has been spoken to in Zapotec since birth, and she is capable of conversational fluency in

Zapotec. However, based on LFSE recordings, she speaks more Spanish than Zapotec in her daily interactions. Giselle's case highlights the fact that even children with strong Zapotec skills may not use the language. Thus, increasing Zapotec language use requires more than simply teaching children Zapotec language skills, as some learners may already have those skills. Instead, it also requires creating environments where children feel comfortable and invested in actually using the language. In Giselle's case, for example, the private setting of talking to the recorder (both alone and with other children) provided an environment where Giselle was able to draw on a fuller range of her Zapotec abilities than she did either in the classroom or in the long LFSE recordings where adults were present.

	Parent report		**Participant report**		**LFSE observation**	
	Spoken	**Heard**	**Spoken**	**Heard**	**Spoken**	**Heard**
Daniel	0%	39%	7%	17%	32%	45%
Giselle	54%	82%	85%	85%	22%	61%
Yessica	NA	NA	0%	0%	1%	13%
Osvaldo	19%	21%	56%	36%	57%	62%
Elena	0%	14%	0%	13%	5%	41%
Leo	23%	56%	27%	19%	25%	79%

Table 5.9: Comparison of parent reported, participant reported, and observed language use, summer 2019. Reports are divided into reports of language spoken and language heard. Percentages represent percentage of time speaking and hearing Zapotec respectively. Yessica's parent did not provide a report of Yessica's language use.

I would also like to consider why adults' perceptions of language use by children differ from children's own perceptions of language use. While the differences may be due to discrepancies in how parents and children interpreted the questions about Zapotec language use, they may also be related to an idea that some parents have expressed to me that their children do in fact know Zapotec already and will eventually come to speak it as they come of age and take on more responsibilities in community activities that are carried out in the language (such as parties and community meetings). This is a viewpoint that I have not heard expressed by children, who talk about the importance of studying and learning Zapotec in order to speak it. It is possible that adults consider their children to be emergent Zapotec speakers in a way that the children themselves do not, but which may be more in line with the results of this study. This view from some parents suggests that increasing children's language use doesn't necessarily require increasing children's language skills (which parents may perceive them to already have), but rather requires access to contexts in which the language can be felicitously used (such as community events where adolescents and adults, but not children, may be expected to speak publicly in Zapotec). While the focus of some parents on contexts for Zapotec use is consistent with the suggestions provided in this study, it is nevertheless

important to note that some children do seem to need (or at least want) additional support in their acquisition of Zapotec language skills as well as contexts for use. Overall, these mixed reports from both observational and reported use suggest the complicated nature of reaching a deep understanding of how and why Zapotec is used by each unique participant in the study.

Of course, given the small LFSE sample size, it is possible that the differences between observed and reported language use could be due to sample bias in the LFSE recordings. They could also be due to inaccuracies in the self-reports, which may be particularly unreliable in endangered language contexts where social pressures may encourage both over- and under-reporting of language use depending on the specific social circumstance (Dauenhauer & Dauenhauer, 1998). Thus, while these data must be taken with a grain of salt, it is important to note the difference between children's Zapotec *abilities* when they are in an environment where they feel comfortable speaking versus children's Zapotec *use* in everyday contexts.

5.3 What can observed language use show us?

Overall, while the challenges of working with kids ages 6-12 resulted in unexpected LFSE data, those data nevertheless provide a useful look into some aspects of participants' language environment and language abilities. My analysis of the data suggests that Zapotec learners may be more proficient than they or their parents report, or than they demonstrate in public spaces like the language revitalization classroom. By inviting children to record their language use, at least in the study presented here, the LFSE recordings provided an environment where children appeared to feel more comfortable speaking in Zapotec. They display a wider range of Zapotec language, which in turn provides greater insight into their overall language abilities. It also provides some documentation of how participants and their families use language in Teotitlán.

Furthermore, the LFSE data can be compared with other data, including classroom observations and reported language use, to gain a more nuanced understanding of how the participants are using language in their daily lives as well as what their level of Zapotec dominance may be. Based on the observational data presented here, along with the reported data presented in chapter 2, I would like to make some observations about Zapotec language use among the study participants.

While Zapotec is used by individuals across Teotitlán of various ages, both men and women, that use is not evenly distributed. Among study participants, adults are more likely to use Zapotec than children, with parents reported to have higher dominance in Zapotec than their children, and the grandparent generation reported to have even more Zapotec dominance than the parent generation (table 2.1). The difference in Zapotec use between adults and children is confirmed by observational data (table 5.7), in which speech produced by adults is more often in Zapotec, while children's speech is more often in Spanish. Participants in LFSE recordings spoke Zapotec proportionally less frequently than they heard

Zapotec spoken by adults, suggesting that language shift from Zapotec to Spanish is indeed taking place across the generations (table 5.7). Furthermore, in my personal interactions with individuals in Teotitlán, I have observed all school-aged children who I have met who live in Teotitlán to speak Spanish, while only some speak Zapotec. On the other hand, I have met some elderly residents of Teotitlán who appear to be Zapotec-dominant.

Among genders, language use also appears to be unequal. As discussed for both reported (section 2.2.3) and observed (section 5.2.2.3) language use data, Zapotec seems to be more frequently used in private spaces than in public spaces, at least among children. This intersects with gender, as the contexts in which more Zapotec was recorded in the LFSE recordings often involved tasks typically done by girls and women in the home: making tortillas, doing laundry, or cooking food, for example. On the other hand, it is often men who leave the home to work in more public sectors, where Spanish can more frequently be heard.

It is abundantly clear that there is not much institutional support for Zapotec through public schooling, as reported data showed no Zapotec use in school with the exception of lunchtime when parents are present (table 2.2.3). These reports are confirmed by my observations and discussions with school officials who likewise reported low or no Zapotec presence in the school (section 4.2.2). While some adults reported Zapotec use in other institutional settings, including Catholic church and the municipal government, not all adults did (section 2.2.3).

In other public, but non-institutional spaces such as local stores and markets, Zapotec is still present, but not all individuals use Zapotec in those spaces (section 2.2.3). In the market in particular, it is important to note the presence of speakers of other Zapotec varieties as well as outsiders who speak Spanish. These individuals likely impact patterns of language use within the market.

Within the family, reported and observed data both show that each family situation can be unique (table 2.3). There do appear to be some families whose households involve mostly Zapotec use, though even in these homes children can be heard speaking to one another in Spanish during the naturalistic recordings. In other households, despite self-reports of Spanish dominance, Zapotec can still be heard and sometimes is used by children. Even between children of the same household, language use can differ, despite similar language input (section 5.2.2).

Differences in language use at the level of the individual may be highly influenced by differing language ideologies and attitudes towards contexts for Zapotec language use. Despite some children demonstrating Zapotec fluency in private settings, these same children can be observed using Spanish or producing only short, simple Zapotec phrases in more public spaces where the pressure to perform in Zapotec is evidently higher (section 5.1). Although observational data showed cases where children were encouraged to use Zapotec and gently guided towards improvement when they failed to produce understandable Zapotec utterances (section 5.1), my own observations have also shown cases where children have been criticized for their Zapotec disfluencies, as well as differences between their Zapotec speech and the speech of elders as a result of language change.

Based upon previous observations, many of which have been confirmed by the data

presented in this chapter, the Zapotec language workshops have been designed in a way that seeks to create positive spaces where children can expand and apply their Zapotec language skills without developing negative associations with Zapotec language use. The reported and observed data presented in this chapter have demonstrated that, in general, children are exposed to Zapotec language input, which opens the possibility that children could learn Zapotec from their environment. Furthermore, the observational data suggest that children have the ability to speak Zapotec—as can be seen both in the classroom recordings (section 5.1) and in their "performance-type" interactions during the naturalistic recordings (section 5.2)—but that children often resist using Zapotec unless they are in a comfortable environment. From what I have observed thus far, it seems that more private settings, such as inside the home, while alone, or while in a small group, children may be able to overcome their hesitations to speak Zapotec and use the full extent of their language skills, even pushing the boundaries of their abilities, asking how to say things in Zapotec that they don't know the word for and attempting to produce sentences even when they have to rephrase or receive assistance from a more fluent speaker. Based on this evidence, it seems that negative language attitudes are playing a crucial role in limiting children's use of Zapotec in Teotitlán, and that work to build a greater set of spaces in which children can feel proud to speak and learn Zapotec could be successful in reversing language shift and increasing Zapotec use among children. One such space may have been formed during the collection of LFSE data. Participants used the recorder to practice their Zapotec language skills and experiment with Zapotec language use, perhaps showing that LFSE recordings may not only be useful in documenting children's language use, but also in advancing language revitalization by *promoting* language use. The LFSE recordings seem to have provided a space that authorized participants to use their Zapotec language skills without criticism. In the next chapter, I will explore more broadly to what extent the Zapotec language workshops have been able to achieve their goals of promoting Zapotec language use among children in both private and public domains through the promotion of positive language attitudes towards Zapotec.

Chapter 6

Program evaluation

In this chapter, I provide a formative evaluation of the Zapotec language workshops for kids that took place from 2017-2019. The goal of this evaluation is to highlight aspects of the program that were relatively successful or unsuccessful in their ability to move towards program goals and meet community needs. I address three main questions regarding the impact of the Zapotec language workshops:

1. Have community members' attitudes towards the Zapotec language changed since the implementation of the workshops?
2. Have the Zapotec language skills of workshop participants increased?
3. Have there been any changes in the contexts in which workshop participants use Zapotec?

Before addressing these questions, I present a brief discussion of the evaluation goals, distinguishing the program evaluation presented here from the assessment of individual learners that is presented elsewhere in the dissertation (particularly in chapters 2, 4, and 5). I also identify and describe the distinction between formative and summative evaluation, justifying the formative approach taken here. I lay out the theoretical perspective and standards that I use in the program evaluation before presenting the data used for the program evaluation. This includes analysis of data collected from photovoice and interviews with parents and children, alongside data presented previously in the dissertation, including LFSE recordings, student work, and my participant observations. Using these data, I address the three main questions above and discuss how the evaluation sheds light on the ways in which the program goals were and were not met through the Zapotec workshops for kids. Finally, I provide some formative suggestions for improvements and positive changes moving forward.

6.1 Evaluation theory and standards

In this section, I outline the theory and standards that I have relied upon for this evaluation, most notably the principles of deliberative democracy outlined in House and Howe (2000). Before describing the theory and standards, however, I briefly overview the differences between evaluation and assessment as I define them, as well as formative versus summative approaches. I hope that by highlighting these differences, I will help to clarify for the reader how each may be useful within a given language revitalization situation. By better understanding the tools that are available to educators in the creation, implementation, assessment, and evaluation of educational programs, I hope that stakeholders will be able to more successfully create and implement programs that are aligned with learners' needs and community goals.

6.1.1 Evaluation versus assessment

I would like to briefly discuss the differences between assessment and evaluation as I use the terms here. Cullingford (1997) describes assessment as having a "narrow focus" (p. 2). Evaluation is more broad; it includes assessment, but also involves examining how teaching methods, student and teacher expectations, and available resources link together, to provide an overall judgement of the efficacy of the educational structures that have been used. In other words, assessments are more concerned with questions of narrow scope, such as what a learner might know. Evaluations, on the other hand, address larger, systemic issues, such as the processes through which a learner might come to acquire (or not acquire) knowledge. Kealey (2010) and Taras (2005) describe a similar division, where assessment focuses on student learning and evaluation examines how the teaching process leads to student learning. Assessment is concerned only with what a student knows, while evaluation is concerned with the process through which the student learns within their specific context and to what extent this learning process aligns with stakeholder goals and desires.

While the distinction between student assessment and program evaluation may be clear, the distinction between assessment and evaluation may be more difficult to identify with other types of assessment/evaluation. Needs assessment, for example, focuses on identifying the needs that a program should address (Watkins & Kaufman, 2002). Nevertheless, both student assessment and needs assessment focus on identifying and understanding *what* is there—whether the *what* is students' knowledge or needs. Evaluation, on the other hand, uses assessment results—along with other data—to understand the extent to which a program is systematically meeting the goals and needs of those involved.

In practice, the distinction between assessment and evaluation is often blurred (Parker, Fleming, Beyerlein, Apple, and Krumsieg 2001; Taras 2005; note usage of the two terms interchangeably in O'Grady 2018 and Peter 2003). As Cullingford (1997) notes, assessment is part of an evaluation, but in some cases student assessment is the main or only source of data in an evaluation process. For example, O'Grady (2018) focuses on assessment as the tool that "allows communities to determine how resources should be invested, to know

what is realistic and reasonable, and to understand the benefits and perils of particular courses of action" (p. 318). That is, according to O'Grady (2018), an evaluation can be carried out based only on assessment data. In fact, O'Grady (2018) narrows in on a subset of possible assessment data, focusing on oral proficiency assessment as the key measure that can be used to evaluate the effectiveness of language revitalization programs. This reflects the assumption that success in language revitalization means an increase in the number of speakers of the language.

However, given the discussion in chapter 5 (especially section 5.3), it seems that assessment of children's language skills (at least in Teotitlán) will not address the lack of Zapotec language use among children. If the goal of language revitalization is to promote sustainable language transmission and language use, assessment of oral language proficiency would only be an indirect measure in this case.[1] Instead, it may be useful to consider not only the range of language skills that learners have, but also their patterns of language use. As a result, it is important to understand the broader set of factors that influence whether or not individuals use language in order to successfully evaluate the efficacy of the Zapotec language workshops for children.

6.1.2 Formative versus summative approaches

In addition to the distinction between assessment and evaluation, the distinction between *formative* and *summative* approaches is crucial to this discussion. Dixson and Worrell (2016) define these terms in the context of education, with formative assessment involving the collection of data that is used to improve student learning, while summative assessment focuses on using data to assess student knowledge at the end of a learning experience (p. 153). However, formative and summative approahces are not always entirely distinct. Taras (2005), for example, describes summative assessment as being a part of formative assessment; both can be used to inform future directions, but summative is designed to serve as an overall assessment of what has been learned up to the point of assessment. To better understand formative versus summative assessment, we might rely on a metaphor attributed to Robert Stake (Lau, 2016): "when the cook tastes the soup, that's formative evaluation; when guests taste the soup, that's summative evaluation" (p. 511, citing Scriven 1991, p. 19). In this metaphor, the cook's tasting of the soup is formative because it is intended to result in changes and improvements to the final product. But once the product is finished, it is summatively assessed, subjected to a judgement in what is assumed to be its final state. However, even this metaphor shows the potential for summative feedback to be used formatively, as the cook could still integrate feedback from the guests into future iterations of soup production, allowing the summative assessment of the soup to be used in a formative way.

In evaluating language revitalization programs, I advocate for a formative approach. Particularly in the case of language revitalization in Teotitlán, where Rosita Jiménez Lorenzo

[1] We observed such a pattern with Giselle in chapter 5: although Giselle demonstrates Zapotec fluency, she does not often use the language. Thus, oral proficiency assessments may be a misleading measure of language revitalization outcomes.

and I plan to continue hosting language workshops for children, a formative evaluation provides an opportunity for us to better understand what is and is not working and make changes that lead to program improvements. This is in line with Lau (2016), who discusses the importance of aligning learning objectives and assessment. According to Lau, it is important to consider how our assessment and evaluation techniques do or do not align with learning and program objectives.[2] For example, a summative evaluation may align with the learning objectives of certification programs. At the end of a program in which learners are certified (whether as public accountants, doctors, or Zapotec language translators, for example), it would be important to understand at the point of certification whether or not an individual has acquired the requisite knowledge to carry out the task for which they are being certified—this requires summative evaluation. Similarly, if one is deciding whether or not to attend a particular certification program, a summative evaluation of that program could be useful for potential learners to make decisions about the value of the program.

However, the situation for this particular language revitalization program is quite different. Instead of focusing on reaching some particular point of knowledge, the focus is on helping learners to grow in their abilities and interest in using Zapotec. Formative evaluation, then, can help to inform both learners and program leaders regarding ways in which future steps can incrementally work towards our long-term goals, and is in greater alignment with the learning and program objectives of the Zapotec language workshops for kids. In the following section, I describe the theoretical framework that I relied on in carrying out the formative program evaluation.

6.1.3 Theoretical perspective and standards used in the Zapotec program

In the field of evaluation, there are three main branches, focusing on methods, use, and valuing (Christie & Alkin, 2012). While these three branches relate to and are enmeshed with one another, they each represent distinct foci in terms of what is most important to the evaluation process. The *methods* branch focuses on developing and utilizing methodologies that supply reliable data which can in turn inform the evaluation process. The *valuing* branch, on the other hand, is more concerned with understanding the connections between that data and the value it is assigned. Finally, the *use* branch centers on concerns related to what will be done with evaluation results: will they be effectively leveraged by stakeholders? While these three branches have different foci, they are nevertheless related to one another. Evaluation results that are not based on reliable data are unlikely to be used; data that is disconnected from community values is unlikely to reveal insights about program outcomes; and evaluations that conflict with community values are unlikely to be useful. Nevertheless, the three branches show different evaluator orientations and priorities.

In this evaluation of the Zapotec language workshops for kids, I align myself most closely with the valuing branch, while incorporating some insights from the use branch. I take as

[2]Lau (2016) focuses on assessment, but I think that the same claim can be made for evaluation.

my foundation the framework of deliberative democratic evaluation developed by House and Howe (2000). This framework acknowledges that evaluations are embedded within social structures, and thus it is impossible to have a "pure methodology" removed from those social structures (p. 3). In deliberative democratic evaluation, the evaluator is not assumed to be be able to judge things as good or bad outside of the situational context. As a result, the evaluator cannot come to the evaluation with preconceived standards against which a program will be judged, but instead must understand the context in order to create standards that reflect the values of stakeholders.

In my view, the deliberative democratic framework is in alignment with frameworks for community-based or participatory research that promote collaboration with or research by community members (Cameron et al. 1992; Czaykowska-Higgins 2009; Leonard and Haynes 2010; Rice 2009; see section 1.2 for further discussion). In fact, Czaykowska-Higgins (2009) explicitly mentions the importance of "democratization of knowledge" in the research process (p. 25). By recognizing that the evaluator does not necessarily have all of the information required to be able to provide an evaluation in the specific context in which the program is being carried out, the evaluator is encouraged to collaborate more equitably with other stakeholders to uncover the values that they might associate with different outcomes.

The subjectivist framework provided by deliberative democratic evaluation is a first step in addressing cultural bias in evaluation, though it still leaves plenty of room for bias and inequity to enter the evaluation (Hood, 2000). To combat such inequities, deliberative democratic evaluation proposes creating more equitable stakeholder participation through inclusion, dialogue, and deliberation. I would like to discuss each of these aspects of the framework in turn, while highlighting House and Howe's (2000) admission that this framework is "an ideal worth pursuing," (p. 9); it may be impossible to implement the deliberative democratic framework in a way that is fully equitable, but it is nevertheless a useful goal to continue working towards.

Under the principle of inclusion, House and Howe (2000) emphasize that all relevant interests need to be included in a way that allows all stakeholder voices to be heard. These authors advocate for the inclusion of a larger group of stakeholders than might be included in other evaluation frameworks, as they do not assume that the evaluator has sufficient knowledge to evaluate on their own. Instead, they need the perspectives and input of stakeholders so that they can understand the values that are relevant within the particular social context they are working in. Moreover, it is important to ensure that traditionally marginalized individuals are included. This may involve advocating for participants who may have less power (House & Howe, 2000), an action that other evaluation professionals like Hood (2000) defend. Hood (2000), for example, suggests that it is the role of the evaluator to unapologetically protect the interests of less powerful stakeholders (p. 80). Echoing House and Howe (2000), he notes that the greater danger is not that advocating for marginalized stakeholders will result in evaluation bias, but rather that failing to engage equitably with marginalized stakeholders will result in those stakeholders' views being misunderstood or unrepresented in the evaluation (p. 81).

Dialogue is a second crucial component which can assist in revealing the true interests of

stakeholders. As House and Howe (2000) note (alongside similar observations by Dauenhauer and Dauenhauer (1998) for language revitalization specifically), "the real interests of an individual or group are not necessarily the same as the perceived interests" (p. 7). As a result, it is not enough to simply ask stakeholders to identify their interests. Instead, interests must be investigated through stakeholder discussion. Furthermore, House and Howe (2000) note that this dialogue must be carried out "under the right conditions" (p. 7) so that stakeholders can freely identify their real interests. This is particularly crucial in the context of language revitalization, where the ongoing forces of marginalization and colonialism create conditions that may be unfavorable to stakeholders' free expression of their interests. Another key factor to establishing "the right conditions" is that participants "must be open to the possibility that their views are wrong" so that they can learn from the dialogue and reconsider their views based on what they learn (Hood 2000, p. 81). Hood (2000) also notes that dialogue can be understood as both verbal and nonverbal; interpreting the full range of communicative practices that stakeholders engage with is crucial to understanding their messages completely (p. 82).

Finally, deliberation is the process through which values are considered and critically examined. Under this view, values are not inherent, but rather emerge through the deliberative process. Deliberation is a particularly useful tool for evaluating language revitalization programs, as many of the values assigned to particular languages and linguistic practices may shift as the relationships between these valuations and their socio-historical contexts are examined.

While the deliberative democratic framework offers some affordances for evaluating the Zapotec language workshops, it also presents some challenges. One critique brought up by Hood (2000) with respect to the field of evaluation more generally is that there is an imbalance in representation among professional evaluators, who are overwhelmingly white and male. In addition to advocating for wider adoption of deliberative democratic evaluations, Hood (2000) also advocates for greater representation of people of color among professional evaluators. In this way, he is aligned with those in linguistic research who advocate for research "by" communities Czaykowska-Higgins (2009), as they both wish to see increased opportunities for people holding marginalized identities to take on positions as researchers and evaluators. While participating in deliberative democratic evaluation may result in an outsider evaluator better understanding the perspectives of participants, it may be better still for the evaluator to be a community member themself.

In evaluating the Zapotec workshops, the presence of a power difference between me as the evaluator and teacher versus other stakeholders presents a potential barrier to successful evaluation. In my role as both teacher and evaluator, I have significant power over how both the program and the evaluation are carried out. Throughout the process, I have done my best to discuss this issue with stakeholders as a way to work against power imbalances and redistribute power more equitably. It has been my goal that through increased transparency and willingness to consider a variety of stakeholders' interests that there has been a reduction in the power differential. Nevertheless, it is unlikely or impossible to fully dismantle these power differentials, and as a result, the evaluation could represent stakeholder interests

inequitably.

Another challenge arises due to the assumption that individuals do not always accurately identify their own interests. Following this assumption may lead to harmful practices on the part of the evaluator. If, for example, I think that in my role as evaluator I am able to better understand the situation than other stakeholders when in fact I do not, I may make incorrect conclusions in the evaluation.

Moreover, deliberative democratic conversations take time. First, trust must be built up between the evaluator(s) and other stakeholders. The conversations themselves are also time-consuming. All stakeholders should be given time to reflect and share their opinions, and to reflect and share their thoughts on others' opinions. Because this involves back-and-forth between stakeholders, it is not enough to simply collect opinions from relevant stakeholders and make a decision; instead, stakeholders must be given multiple opportunities to share their perspectives, which may evolve as they are exposed to the perspectives of others. In cases where program decisions need to be made quickly, this can have negative consequences, either slowing down program implementation, or requiring that a decision be made without full democratic participation of all stakeholders.

Despite these challenges, the framework offers some significant benefits. The emphasis on inclusion overtly counters the weight of more powerful stakeholders and allows for the creation of an evaluation that reflects a broader range of stakeholder needs. If dialogue and deliberation are carried out successfully, the evaluator will be able to deeply understand the perspectives of stakeholders and will not act in way that their beliefs are imposed upon others. Again, this is in alignment with other research models proposed in linguistics that push for the inclusion of all relevant stakeholders and consideration of a diversity of knowledge and expertise (Czaykowska-Higgins, 2009; Leonard & Haynes, 2010; Rice, 2009).

More specifically in Teotitlán, the deliberative democratic approach is consistent with other common practices, as the town is governed democratically with periodic meetings in which citizens may speak in front of the community and engage in dialogue and deliberation about town policies. Although deliberative democratic evaluation is not centered in the use branch of evaluation, I believe that it will lead to greater use of evaluation results in this case. Given the similarities between this approach and the democratic discourse that already occurs in Teotitlán as a method for decision-making and policy implementation, the deliberative democratic approach is likely to be considered credible among stakeholders. In practice, stakeholders have commented on the importance of involving a wide range of individuals in the process of making decisions about the Zapotec language workshops, which supports my belief that this approach is culturally appropriate and credible in the context of Teotitlán.

In addition to deliberative democracy, I also draw on some of the tools developed within the use-based CIPP model developed by Stufflebeam (1971). This model incorporates four types of evaluation: *Context* evaluation to identify strengths and weaknesses within the system to plan its improvement; *Input* evaluation to decide between alternative strategies for achieving objectives; *Process* evaluation to assess the performance of a given strategy in its actual implementation; and *Product* evaluation to measure outcomes of the program.

Throughout the evaluation, I have kept the CIPP model in mind, though I have attempted to carry out all four types of evaluation from a deliberative democratic framework so that all relevant stakeholders can be involved throughout, and to maintain a subjective approach that takes into account the context of Teotitlán in determining the best ways forward for the Zapotec language workshops. Furthermore, Stufflebeam's (1971) use-based model focuses on ensuring that the evaluation results are helpful for stakeholders and can result in real positive change, and he emphasizes the importance of cyclically evaluating, improving, and re-evaluating programs. This is in alignment with the formative nature of this program evaluation.

Before moving on to a discussion of the evaluation data, I would like to briefly comment on how this evaluation meets ethical standards. This evaluation reflects the guiding principles of the Association of American Evaluators (2018). The evaluation requires data-based inquiry that is tailored to the context of Teotitlán. I am qualified as an evaluator, both in terms of my background in coursework on evaluation and language revitalization, and in terms of my understanding of the context in Teotitlán through my experience there. The framework of deliberative democratic evaluation allows for open communication between all stakeholders, and honors the opinions, dignity, and individuality of the individuals involved. Finally, the purpose of the evaluation is to contribute to the common good by identifying areas of improvement to the current language program that will benefit the community as a whole.

The evaluation also reflects the ethical standards outlined in the Linguistic Society of America Revised Ethics Statement (2019), which specifies that as linguists, it is our responsibility to anticipate possible ethical issues, avoid causing harm to those with whom we work, and to ensure that our work benefits others. The LSA's statement also outlines responsibilities to research participants, communities, and the public. This includes providing informed consent, considering what compensation is appropriate for participation, consulting with participants about the research trajectory, and facilitating access to research results. It also requires consideration of how our research affects communities more broadly. As part of this, the statement recommends that researchers follow culturally-appropriate processes for data collection and use (which is consistent with both the PAR and deliberative democratic frameworks used here). Moreover, the statement mentions the importance of considering possible secondary effects (in politics, military, education, health, and the law) of the research findings. Again, collaborative methodologies like PAR and democratic deliberation will assist in better identifying and ameliorating potential negative impacts of research.

6.2 Data used for the program evaluation

In the following subsections, I provide an overview of the data I relied on in the program evaluation. Some of the relevant data have already been discussed in detail elsewhere in the dissertation. However, in this section I will introduce two additional sets of data: photovoice (section 6.2.1) and data on attitudes from one-on-one interviews (section 6.2.2). I present these sources of data in this chapter because they both address some of the goals

and underlying motivations that have led individuals involved in the Zapotec workshops to become involved in language revitalization. Such motivations are crucial to understand when designing a language revitalization initiative and when evaluating to what extent a program is able to meet stakeholders' needs. I will then highlight some data on reported language use (chapter 2) and observed language use (chapters 4 and 5) that will be key to the evaluation process. The methodologies and data are presented in this section, and the evaluation results will be discussed in section 6.3.

6.2.1 Photovoice

Photovoice is a technique for community-based participatory action research (Liebenberg, 2018) developed by Wang and Burris (1997) in which participants are asked to take photos that represent their views about an issue, discuss those photos as a group, and mobilize together to take action. The three main goals of photovoice are: "(1) to enable people to record and reflect their community's strengths and concerns, (2) to promote critical dialogue and knowledge about important issues through large and small group discussion of photographs, and (3) to reach policymakers" (Wang & Burris, 1997, p. 370). The focus of photovoice is on dialogue around issues that participants themselves identify as being of importance, with a concerted effort to facilitate equitable participation from all stakeholders. This emphasis on equity strives to empower marginalized groups (in particular, non-literate individuals, children, and others who can use photos to express themselves if they are unable to use or disprefer the written format). It is also a feminist approach, addressing male bias by allowing all participants to supply their own images and reflect their perspectives and experiences. Because of its emphasis on equitable participation and dialogue, photovoice fits well within the deliberative democratic framework. In this evaluation, photovoice was mainly used to inform the context and input in project development. Photovoice was useful in identifying community needs and in pinpointing strategies that would help move towards meeting those needs.

The photovoice technique was first used in needs assessment for public health projects, but its use has spread widely. In the next two sections, I will present an overview of some applications of photovoice in Indigenous and Indigenous education contexts before describing its use among Zapotec language workshop participants.

6.2.1.1 Photovoice in Indigenous contexts

Since the late 1990s, photovoice has been used in Indigenous communities for a variety of purposes, including health and environmental needs assessments. Castleden, Garvin, and the Huu-ay-aht First Nation (2008) used photovoice to identify and understand health risks and non-risks in the Huu-ay-aht First Nation. They modified the format slightly, training participants in photography and ethics on a rolling basis and conducting one-on-one interviews with participants before sharing their photos and narratives at periodic community dinners. They found that the method was successful in at least two key ways: (1) it mobilized

the community into action around some of the themes presented through photovoice and (2) participants enjoyed the process and did not experience "research fatigue" (p. 9).

Gray (2011) similarly employed photovoice to mobilize action to address the ongoing effects of Canada's Indian Residential School System (IRSS). Three young urban natives were asked to photograph both negative reminders of IRSS and the perceived strengths of the community to carry on the process of healing. The project revealed the participants' deep understanding of the ongoing effects of IRSS and its legacy organizations, such as the foster care system. Like Castleden et al. (2008), Gray (2011) also noted that the photovoice technique was not only effective, but also enjoyable for participants.

6.2.1.2 Photovoice in Indigenous language education contexts

Photovoice has also been successfully employed in Indigenous language revitalization contexts. Kenfield (2018) describes the use of photovoice with Spanish-Quechua bilingual college students in Cuzco, Peru as they identified ways in which Quechua language use could be better supported by their university. Students showed resistance to deficit models, turning not to colonial notions but to the Quechuan concept of *t'ikarinanpaq*, or flourishing. Through the photovoice project, they decided to add events to the agenda of their cultural group, *Voluntariado Intercultural Hatun Ñan*, with the goal of creating spaces where Quechua could flourish. This included not only promoting self-respect among Quechuans, but also ensuring that non-Quechuans and institutions change their colonial practices. The implementation of *t'ikarinanpaq* was conceptualized as a cyclical process that would disrupt the reproduction of *supay* (actions with ill intent) such as deficit framings of Quechuans. Kenfield (2018) argues that the realization of these goals and implementation of intiatives to achieve them was facilitated by the photovoice process.

Thompson, Miller, and Cameron (2016) report on the use of photovoice in understanding the effects of Head Start in nine Indigenous communities in Michigan. The research questions they developed were fairly broad, covering not only the impacts of Head Start, but also what participants wished to share about community life generally. Nine individuals (enrolled members from nine different tribes employed by Head Start in different capacities) participated in the project. They took their own photos, but subsequently worked as a group to develop collective narratives for each selected photo. A group of 25 posters were created for display at the end of the project. The researchers reported that the in-person conversations about the photos were a more effective way of generating feedback than writing answers as storytelling is a "more natural and effective form of communication" (p. 307) within "Native epistemologies" (p. 308). The project was able to stimulate concrete changes, such as improvements to Head Start's physical facilities and an increase in the energy dedicated to cultural activities in the Head Start programs.

Romero-Little (2010) also used photovoice to evaluate early childhood education in the Jemez community and to identify the types of teaching and learning that community members considered to be appropriate for Jemez children. Parents and grandparents took pho-

tographs and engaged in dialogue that will be used to inform changes to the Head Start program so that it better reflects community values for early childhood education.

In addition, Patrick, Budach, and Muckpaloo (2013) worked with urban Inuit families in Ottawa, Canada, using a photovoice project as a way to open up a space for the development of Inuit literacies. The project involved eight children (ages 4-14) and nine parents and caregivers (including one adoptive parent). Parents and children worked collaboratively during three workshops over four weeks during which time participants were trained in photography, discussed and selected their photographs, and composed stories (which were then translated into Inuktitut). The projects reflected the multiple identities of urban native youth, and also served as a tool that families could take home to continue practicing and building on this particular type of literacy.

These diverse projects illustrate some of the ways in which photovoice has already been adapted to the unique context of the communities in which it is utilized. At the same time, some aspects of photovoice have the potential to conflict with assumptions frequently made in language revitalization. Most notably, photovoice places an emphasis on ultimately mobilizing participants to act as a unified group (Liebenberg, 2018, p. 7), while language revitalization theory generally cautions against the role of the (outsider) researcher in mobilizing a group (Hinton et al. (2018), Beier and Michael (2018) on language revitalization; Leonard (2017) on language reclamation; Pérez Báez (2014) for counterarguments[3]). For a researcher from outside the community to carry out a photovoice project can require a fair amount of activism on the part of the outsider in order to facilitate a dialogue and unified action around the project. Does this constitute an unethical insertion of the outsider into community affairs, or is the teaching of photovoice techniques a process of community empowerment that allows a community to take self-motivated action? I think that the answer depends on the specific case, as it is possible that a researcher could encourage action using their relative status and power in a way that is not truly community motivated. Nevertheless, it is also possible that through using dialogic techniques, community members themselves may converge on ideas for mobilization that is independent of the researcher's influence.

Furthermore, while photovoice is less extractive in nature than other types of data collection, according to Castleden et al. (2008), "it has been developed as a Western research process largely undertaken with non-Western populations" (p. 1395). It is true that photovoice has often been used with non-Western populations, including participants in Botswana, Cameroon, China, Guatemala, Israel, South Africa, and Uganda, as well as Indigenous participants in Canada and immigrant participants from Latin America in the US (Catalani & Minkler, 2010; Hergenrather, Rhodes, & Bardhoshi, 2009). However, it has also been used with populations in Australia, Canada, Ireland, the UK, and the US (Catalani & Minkler, 2010). For example, in a literature review of photovoice studies in health and public health, Catalani and Minkler (2010) examined 41 photovoice studies, 26 of which were

[3]Pérez Báez (2014) provides insight from her own experience working in a Zapotec community, where her research on the language revealed that it was much more endangered than most people in the community perceived. By presenting the results of her research, she was contributing to a mobilization of language activism that she argues was necessary and ethical.

carried out with populations in the US, who—while still marginalized in many cases (i.e. stroke survivors, African Americans, low-income youth, etc.)—may be considered 'Western' populations. Similarly, Hergenrather et al. (2009) reviewed 31 photovoice studies (on any topics), including 19 that were carried out in the US. While Castleden's 2008 claim that photovoice is used largely with non-Western populations may not hold up, the criticism of Western-developed methodologies being applied to non-Western populations is still worth considering. Photovoice is not an inherently Indigenous methodology, and it has the potential to fail in its inclusivity and promotion of dialogue. In particular, it is crucial to include not only the process of photograph collection and dialogue, but also collaborative enumeration of key themes, dissemination of results, and community mobilization, or else photovoice could have harmful impacts.

6.2.1.3 Implementation and results

In recruiting students for the workshops and again on the first day of the workshops, students were asked if they wished to participate in the photovoice project, which involved taking photos of "what speaking Zapotec means to you." Students who were interested were loaned a smartphone with an 8 megapixel camera for about 24 hours.[4] I instructed the students in the use of the phones and students were given a half sheet of paper explaining the project and asking them to supply a caption for their photo (figure 6.1).[5] I provided the question in Spanish under the assumption that students would be more comfortable responding in Spanish, but in retrospect that was an unfounded assumption on my part; it would be interesting in future iterations of photovoice to provide the question in Zapotec.

In the evening after the first day of classes, students who participated in photovoice (from both the morning and afternoon sessions of the workshops) brought in their pictures. They and I sat around a computer to view the images and read students' submitted captions. Students were invited to elaborate on why they had taken the photo and what they think others might see in the photo, and their classmates were also encouraged to share their thoughts and feelings about the images. The conversation was audio recorded using a Zoom H4n recorder placed in the center of the room and I took notes during the discussion.

During the second week of classes, students were again invited to participate, along with their parents. Students checked out phones for 24 hours and submitted photos with captions, as well as photos taken by their parents with captions. On the final day of class, students engaged in a second group reflection on the photovoice submissions they had collected within each class (one session in the morning, one in the afternoon); the discussion was audio recorded and I took notes during the discussion. Parents were invited to participate as well,

[4]Phones were loaned on a rotating basis, as I had access to four smartphones, but more than four students participated in photo collection.

[5]Smartphones are widespread in Teotitlán and students generally did not have diffculty operating the phones they were issued. In fact, some students were able to learn how to manipulate the images on their own using digital tools like filters.

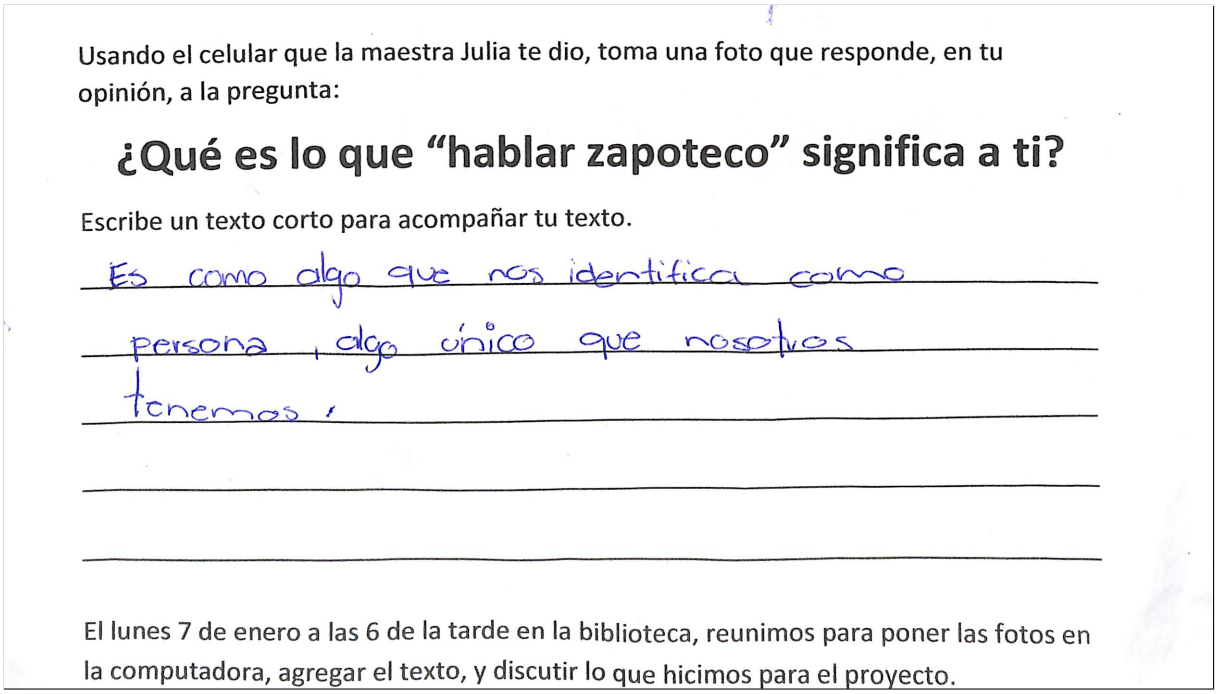

Figure 6.1: Example of a response to the photovoice instructions distributed to children in Teotitlán. The prompt reads, "Using the cell phone that Teacher Julia gave you, take a photo that responds, in your opinion, to the question 'What does "speaking Zapotec" mean to you?' Write a short text to accompany your text." (This instruction contains a mistake, as it should read, "Write a short text to accompany your photo.") The student's response reads, "It's something that identifies us as people, something unique that we have." The text at the bottom reads, "On Monday, January 7 at 6pm in the library, we'll get together to put the photos on the computer, add the text, and discuss what we did for the project."

and several parents submitted photos and captions, but logistical problems in getting them in the same space at the same time prevented parents' participation in the group discussion.

Several themes emerged from the photovoice project and discussions. One strong theme was the connection with ancestors that students tied to the use of Zapotec. One student took a picture of prehispanic carvings in town (figure 6.2) and noted, "Es no perder y preservar nuestra lengua indígena y con ello nuestra cultura, legado de nuestros antepasados zapotecos."[6]

Another student connected ancestors with present-day traditions like dekerneling corn, providing the image in figure 6.3 and commenting, "Significa que es lo que dejaron nuestros antepasados y abuelos y que tenemos que conservar esta lengua y que no se pierde y no se mezcle con el español, puro zapoteco antiguo, lo que dejaron nuestros abuelos y se debe de

[6] "It's about not losing, preserving our Indigenous language, and with that our culture, the legacy of our Zapotec ancestors."

Figure 6.2: Photovoice photo of a carving taken by a student

inculcar esta lengua desde cuando somos chiquitos."[7] This comment also highlights aspects of linguistic purism that are salient in Teotitlán, as the child desires for Zapotec to remain "puro zapoteco antiguo" ('pure, old Zapotec') and resist shifting under the influence of Spanish.

Other students drew connections between language and traditional practices such as weaving, tortilla making, turkey farming, and the traditional dance of the town, *Danza de la Pluma*, photographing relevant images. In two cases, students learned how to apply filters to their photos for artistic effect, showing the creativity and agency even of young children in using photos to express their thoughts and opinions (figure 6.4).

A new theme that emerged through photovoice that had not been previously expressed in interviews or focus groups was the connection between language and nature. Students connected that plants were part of nature, just as mother languages are part of nature. One student photographed a flower and wrote that the language "es algo que nos identifica como persona, algo único que nosotros tenemos."[8] They went on to elaborate that in the same way that every flower is unique, the Zapotec of each individual is also unique. This view

[7] "It means it's what our ancestors and grandparents left us and that we have to conserve the language and that it isn't lost and it isn't mixed with Spanish, just old Zapotec, what our grandparents left us, and should be instilled in us from the time we're young."

[8] "It's something that identifies us as people, something unique that we have."

Figure 6.3: Photovoice photo of a woman dekerneling corn (cropped to maintain subject's privacy).

of tolerance for variation in Zapotec language is not often heard, but photovoice appears to have created a space for that individual to voice their opinion.

Overall, the format of photovoice used in Teotitlán was successful, though it was easier to get older students to elaborate on their photos, giving supporting explanations as to why they took the photos, than it was with younger children. Particularly students in the 5-7 age range had a difficult time thinking back to why they had taken the photo and what they wanted others to see in it. However, the activity allowed students to voice opinions on the importance of Zapotec that had not been heard before, and the observations they made helped the organizers of the workshops identify topics (such as tortilla making and turkey farming) for future iterations. One potential downside of the method is that after repeating two iterations within two weeks, the second set of photos did not reveal as many new perspectives, possibly indicating that the data collection had reached saturation. Perhaps allowing for more time between iterations, as well as generally providing more time for self-reflection, would increase the quality of discussion.

Summary of results. Overall, photovoice provided a window for participants to share their perspectives through democratic deliberation, and it was useful for the context and

Figure 6.4: Photovoice photos that have been edited with filters. On the left, one student's mother is making tortillas on the comal. On the right, a student has photographed one of the turkeys they are raising.

input aspects of the program evaluation. By better understanding the attitudes that children held towards Zapotec through discussing their photos, I was able to more fully understand the context in which the Zapotec workshops were being held. Furthermore, the students' photos highlighted their interests, providing support for focusing on particular themes over others in future iterations of the language workshops.

6.2.2 Interviews

As discussed in chapter 2, I also conducted semi-structured interviews with some participants and their parents. In addition to collecting the data on language use reported in chapter 2, I also collected data on children and parent motivations, expectations, and perceived outcomes from attending the workshops. In this section, I present a summary of participants' responses focusing on themes that emerged across multiple participants' interviews.

6.2.2.1 Interviews from January 2019

In January 2019, I interviewed 5 children before (A1 interviews) and 9 children[9] and 10 adults following the workshops (A2 interviews). Children in A1 interviews were asked why they had signed up for the Zapotec course, and they responded that they wanted to learn generally (3/5 respondents) or that they wanted to learn pronunciation and writing (1/5 respondents); one child didn't provide a reason. They were also asked if there was anything in particular they wanted to learn. Three respondents didn't provide any particular things that they hoped to learn, one noted they wanted to sing, and another wanted to learn conversational skills. Children in the A2 interviews mostly noted that they were interested in learning. In addition, one student mentioned wanted to learn how to write in Zapotec. Another participant mentioned that the Zapotec language is beautiful, and this motivated them to join the course. Finally, one student mentioned that their parents had obligated them to attend.

Parents mentioned similar motivations, such as being interested in their child learning the language. Some parents also mentioned specific interests in their children learning to write in Zapotec. At the same time, some expressed preoccupation about language loss being a motivation for sending their children, which was not a theme brought up by children. Other themes included the connections between language, culture, and identity; parents mentioned that they didn't want their children to lose their identity and that they hoped they would feel proud of who they are. Moreover, one parent mentioned the importance of learning Zapotec so that children can interact with their elders. Finally, one parent also mentioned that their children were interested in attending the workshops, and that motivated them to support their children's interests.

Parents were more specific in their discussion of what they hoped children would learn in the course. Several noted interest in their children learning the basics of the language, including greetings, colors, animals, and other simple phrases. Another theme was the importance of learning to interact with other Zapotec speakers through proper greetings and introductions. One parent mentioned writing as an important skill to learn. At least two parents also pointed out that they hoped children would learn through games and play as a way to make Zapotec more fun.

I also asked parents if they noticed any changes in their children since they began the Zapotec workshops. The most common theme was that parents reported their children showing greater interest in Zapotec, such as paying more attention to people when they speak Zapotec and engaging in more active learning strategies. Parents noted increases in their children's asking about Zapotec and in using or practicing the language. Specifically, one parent noted that their child began producing Zapotec (rather than simply listening). Another noted their child was singing and writing in Zapotec after attending the workshops. A third commented on improvements in the quality of their child's Zapotec speech.

[9]One child participant in both the A1 and A2 interviews was very shy and had difficulties answering any of the questions about language attitudes, so for many questions there is only data from 4 children for A1 interviews and 8 children for A2 interviews.

Parents were asked if their children had mentioned anything to them about the Zapotec course. Parents reported their children highlighting positive aspects of the course, such as how they enjoyed it and wanted to continue attending, as well as how it was fun. One parent mentioned that their child had made new friends through the course; another mentioned how their child enjoyed the social gatherings hosted as part of the course. These both point to the children's valuing of the community-building aspects of the course. In terms of specific learning outcomes, one parent mentioned their child reporting back on how they had learned colors and numbers. Another said that they learned new vocabulary (including the words for 'turtle' and 'black widow') after their child learned them at the workshop and brought them home. One parent reported a negative reaction from their child, namely that the child was unmotivated to attend during days with cold weather.

I asked children if they had mentioned anything about the course to their parents. Two children reported saying nothing, but others mentioned telling their parents that they played in the workshops and they enjoyed them. Some children said they told their parents about learning to write in the course or mentioned the specific activity of creating a fortune teller (figure 6.5) in Zapotec.[10]

I asked both children and parents if they would recommend the workshops to others. Some children said that they would recommend the course to their friends, noting that participating would allow other children to learn to speak Zapotec. One child said they would recommend the course to their friends so that they could play together during classes. One child said they didn't know if they'd recommend the course or not; another said that they would not recommend it as all of their classmates at school already speak Zapotec.[11] All of the parents that I interviewed indicated that they would recommend that their friends send their children to the course. Their reasons centered on several themes. One was the importance of maintaining Zapotec, noting that the course is a good start in learning the language and that it is important not to lose the language. In addition, several parents noted that the course was beneficial because children learned. In particular, one parent noted that their children learned not only Zapotec, but also computer skills through the course, which was beneficial for them. On a related theme, some parents noted the value of the course as a fun activity that children could do in during school vacations so that they are not watching TV or playing on their cell phones, but instead are learning in a fun environment. Finally, one parent also noted that through the course, children are able to form community.

Parents were asked for any further thoughts, questions, or suggestions that they might have about the course. They suggested additional topics that could be covered in future

[10]This was the last activity that the group had in the Zapotec course, so it seems likely that this was simply what was most saliently in children's memory from the course.

[11]I find this particularly interesting, as it is not my impression that there are any groups of schoolchildren with so many Zapotec speakers in Teotitlán at present. The child who said this is one of the few children whose parent does not speak Zapotec. It seems possible that the child perceives other children who may have greater Zapotec exposure and greater Zapotec skills to be "Zapotec speakers" even if they do not regularly use Zapotec or consider themselves to be speakers, though this would require further investigation to say definitively.

Figure 6.5: Image of the inside of a fortune teller created by a student at the January 2019 Zapotec workshops. Text reads possible future activities (clockwise from top): being a doctor, getting a college degree, being a ballerina, and planting corn.

courses (including myths, songs, poetry, planting corn, and developing an international exchange program for Zapotec learners and learners abroad). Suggestions for improvement included holding more regular sessions, working more closely with other community members (particularly teachers at the public schools), separating children into smaller age categories, and finding a better space to host the workshops. Creating and disseminating more books in Zapotec was also suggested as a future activity.

Summary of results. Both children and parents expressed that *learning* was a motivating factor in attending the workshops. In some cases, the motivation was not only to learn Zapotec, but to learn more generally. This is in line with the workshop's goals of promoting additive language learning, in which learning and using language—whether in Zapotec, Spanish, or other languages—is all valued. Gaining a sense of community and becoming more connected with others in Teotitlán was also a motivating factor, and simi-

larly aligned with course goals to build a community of Zapotec language learners. Parents' reports that their children were more interested in the Zapotec language and had (in some cases) increased production of Zapotec show that the workshops had some positive impact.

6.2.2.2 Interviews from summer 2019

In summer 2019, I interviewed 14 children and 13 adults (B interviews). Both children and adults were asked what they thought of the workshops. All children who responded had positive comments, noting that they thought the workshops were "good" or "fun". Other themes that children highlighted were the outings and the games. Some individuals mentioned specific topics as well, including writing and learning words for body parts, animals, and fruits. One participant mentioned that they enjoyed creating recordings (presumably LFSE recordings) as well. Parents highlighted similar themes, noting that the workshops were "good" or "better than other times" workshops had been held. Many also highlighted that the workshops were interesting, not tedious, and sparked curiosity around the language. Several parents noted learning to write in Zapotec as a key benefit of the workshops. The outings were also highlighted, along with community building. One parent noted that it was good to see parents more committed to Zapotec language revitalization in this iteration of the workshops.

When asked if they had noted any changes in their child since the beginning of the workshops, parents mentioned increases in their children's attempts to learn and use Zapotec. One parent noted, "Me empieza hablar más en zapoteco, a veces mete español, pero intenta."[12] Another had a similar observation, noting that their child "lo habla como puede, pero ya intenta."[13] Several parents noted increases in speech (including one who said their child now speaks Zapotec daily) and several noted increases in writing abilities. Finally, one parent noted changes in their children's sense of identity, noting that one child now is less ashamed and another now understands that Zapotec is part of their identity.

Responses from the children themselves were more mixed. When asked if they felt different now that the Zapotec class was over, six students noted positive changes, such as feeling good about learning new things or feeling happier. Four students reported not feeling differently or feeling "normal." Finally, one student reported feeling "sad" because they wanted to continue with more Zapotec classes.

When asked what would improve the course, children mentioned having more outings and incorporating more games. They also mentioned that it would be good to have more chances for children to speak with one another in Zapotec. Parents noted similarly that it would be beneficial to develop more connections between community members (including community elders and children learning Zapotec). They also supported having more outings, along with increasing the length of the workshops.

Summary of results. Several similar themes emerged in the summer 2019 interviews as in the January 2019 interviews. Parents and children highlighted outings as being an impact-

[12] "He's starting to speak more in Zapotec, sometimes he adds in Spanish, but he's trying."

[13] "He speaks it as he can, but now he tries."

ful element of the course, noting that they are enjoyable and also help to build community and commitment from participants as part of a Zapotec language learning community. Parents again reported that their children are showing interest in speaking Zapotec by *trying* to use the language, including using Zapotec in conjunction with Spanish. Some parents' comments were in line with the additive approach of the workshops, as they did not focus on criticizing children for using Zapotec and Spanish or making 'errors' in Zapotec, but instead highlighted that children are trying and learning through practice.

6.2.3 Evaluation data from reported and observed language use

While the results of data collection on both reported and observed language use are discussed in more detail earlier in this dissertation, I would like to highlight that the evaluation also relies on insights from reported language use collected through one-on-one interviews with children and their parents (chapter 2), as well my own observations as a participant in the Zapotec workshops (sections 4.6 and 5.1). Finally, I will incorporate findings from the naturalistic recordings (section 5.2).

6.3 Evaluation results

In presenting the evaluation results, I follow Stufflebeam (1971) and divide the results into Context, Input, Process, and Product, each described in turn below. It is important to note that the conclusions presented here are informed by the data presented above, which was then presented to stakeholders through informal discussion before, during, and after the implementation of each iteration of workshops. The conclusions I present have been shaped not only by the data, but also by the responses of stakeholders to potential benefits and challenges of different approaches that emerged during repeated informal conversations.

6.3.1 Context

Context evaluation requires identifying strengths, weaknesses, and areas of improvement for the prior system. In this case, I identified areas where potential Zapotec language learning and language use was not taking place at the start of the project. Census data (supported by my personal observations and data from parents and children) suggested that Zapotec remains widely spoken in Teotitlán (section 2.1). However, my personal observations and data from one-on-one interviews suggested that the population of Zapotec speakers is aging and younger generations are not using Zapotec as widely as previous generations (section 2.2). This generational shift in language presents a challenge to Zapotec language maintenance in the community. LFSE data also revealed that children tend to use Zapotec more often with parents or other adults than with their peers (section 5.3). While adult-child interactions in Zapotec represent a strength that can be leveraged, the lack of peer interaction in Zapotec represents an area where improvement can be made. Another area where Zapotec could be

more widely used is within the school day, as interview data suggested that it is currently used only during recess at the elementary school when parents come to deliver food to their children (section 2.2.3).

At the same time, interview data also suggests that at least some children are interested in learning and using Zapotec. As reported in section 6.2.2, when children were asked why they had attended the language workshops, one main theme was interest in learning. Only one child noted that their parents had asked them to attend the workshops, and one parent noted that they sent their children to the workshops because of the children's interest. These reports suggest that some children are motivated to learn Zapotec, which is a great benefit to build on for language revitalization. With these strengths and areas of improvement in mind, let us now turn to input evaluation.

6.3.2 Input

Input evaluation requires considering and deciding between various potential initiatives or strategies for addressing the issues identified through context evaluation. Here, I consider the choices we made, taking into account what we knew about the context and what we have since learned through implementing the workshops. For instance, one decision that was made early on was to focus our efforts on children ages 5-12. This decision was based on surveying the language promotion initiatives that were already in place at that time, including Zapotec support in the preschool and high school along with the community language committee for adults (section 4.2). Given the context of intergenerational language shift, it seemed beneficial to focus on children, as many adults continue to use the language (section 2.1). And given that preschool and high school aged children could already access at least some Zapotec language programming, children in elementary and middle school, ages 5-12, appeared to be the most an underserved demographic. In reality, students of a wider age range attended. Nevertheless, the majority of participants fell within this age range and creating materials targeted towards that age group seemed to fill a gap in language revitalization activities for elementary aged children.

We also had to decide whether to work within schools or to create an extra-curricular program. Given that the context assessment revealed that the school is a place where Spanish is dominant, it may have made sense to work together with schools to bring Zapotec into the school environment. However, there were logistical barriers to implementing Zapotec in schools. As discussed in section 4.2, only one of the two elementary schools ultimately implemented Zapotec courses. This is in part because of differences in the interests and priorities of families that attend both schools. The afternoon school (which began offering Zapotec courses in winter 2019) includes more families that are interested in Zapotec language learning, while the morning school includes more families that are interested in other courses, including computation. Because the entire school—including families, faculty, and administrators alongside officials and regulations at state and federal levels—is involved in deciding whether or not Zapotec is added to the school curriculum, getting Zapotec added into the school system is particularly difficult. Moreover, the context evaluation revealed

that there were at least some children in Teotitlán who were interested in learning Zapotec (section 6.2.2). Because of this interest, it wasn't necessary to enforce attendance at the Zapotec workshops (as might have been possible if the workshops were made part of the mandatory school curriculum). Instead, the workshops were designed as extra-curricular, optional events, and it was hoped that students would attend voluntarily. This also fit with our capacity: with two main facilitators, Rosita Jiménez Lorenzo and I, it would be difficult for us to take on the responsibility of teaching all of the elementary school students. Of course, the program could have been designed to target a specific grade, thus reducing the number of students. However, this would mean that not all students ages 5-12 would get to participate. Furthermore, students who attended the workshops would not have any obvious opportunities to continue with their Zapotec studies after the target year. Thus, given the lack of interest from some individuals and the presence of interest from others, paired with our capacity, the extra-curricular workshops for those who were interested were chosen as the intervention.

Within the workshops, there were a variety of options for the types of activities that would be carried out. Because there were already existing initiatives (including work being done by the community language committee, discussed further in section 4.2.3) that focused on recovering Zapotec words that had become less commonly used, developing a consistent writing system, and understanding specific grammar points, it seemed beneficial for this initiative to take a different approach that would complement those existing initiatives. It was also important to build on participants' interests and desires, such as including more interactive elements, such as outings and games, rather than more rote elements like vocabulary or grammar instruction (section 6.2.2). Participants' interests were also reinforced in their photovoice submissions, through which they highlighted the importance of connecting language with history, culture, and identity. In addition, drawing on the idea that diversity in Zapotec language use was to be valued, the focus was not on teaching any "correct" or "standard" way of using Zapotec, but instead Rosita and I as facilitators invited participants to use the language in a way that felt comfortable to them (section 1.3.3).

The focus on *using* Zapotec in interactive environments (rather than *teaching* particular linguistic elements) also reflects our understanding that some children may already have significant abilities in Zapotec. The barrier to increased Zapotec use is in some cases related to a lack of contexts in which children feel comfortable and invested in using their Zapotec skills. As a result, it was important to focus on increasing contexts of use in the workshops.

Finally, in terms of selecting themes to cover in the course, Rosita and I began by relying on topics that participants brought up either in photovoice (section 6.2.1) or in one-on-one interviews (section 6.2.2). Again, by bringing in topics that participants noted were of interest to them, we hoped to foster greater interest and investment in the workshops.

6.3.3 Process

In terms of process, there were some aspects of workshop implementation that were more and less aligned with the program goals. Considering the activities and outputs listed in the

program logic model (figure 4.5) and discussed in section 4.5, the greatest deviation between what had been planned and what was realized was the quantity of Zapotec used during the workshops. With me as one of the two main facilitators, I ended up using significant amounts of Spanish. This was particularly true during parts of the workshops where children were outside the classroom. For example, while walking to different destinations around town, I tended to use Spanish when I needed to ensure that children were acting safely (such as standing to one side of the road and staying with their designated "buddy"). My presence likely also influenced Rosita to use Spanish, as she often addressed me in Spanish, and then continued speaking in Spanish with the children. This could also be expanded to cover interactions with Zapotec speakers during field trips. While these outings did provide opportunities for children to speak in Zapotec, in some cases adults used Spanish as well (section 5.1.2). More Zapotec was used when children had prepared more in advance, particularly when they had created questions to ask adults.

While the use of Zapotec could certainly increase, allowing both Spanish and Zapotec into the workshops allowed for the valuing of both languages. Students were encouraged to use any linguistic resources to which they had access in order to express themselves in a way that they felt comfortable (section 4.6.6). This supported an additive conceptualization of language through which learners continue to learn and build skills in their languages without feeling the need to abandon any of the skills they already have.

In the logic model, another goal was to create materials in Zapotec on a daily basis for children to use at home. In practice, these materials were created daily, but they were not always brought home or used by students outside of class. Sometimes, the students collaboratively created games and activities in Zapotec which were then left at the library (section 4.6.4). The idea was that students would be able to consult these materials in the library on an ongoing basis. However, in practice, these materials were not always kept, and when they were, they were not always easy for students to access. For example, some materials were kept in a cabinet, and students could access them by asking the librarian, but they were not available for casual browsing like other library materials. As a result, it seems like they were rarely consulted.

Other products that were outlined included the daily use of Zapotec games, which was indeed achieved. Each class session had one or more games or other interactive activities for students. Furthermore, each session of workshops included at least 10 hours of classroom learning and 10 hours of interaction with Zapotec speakers. Finally, attendance was another output; performance here was variable. Overall, the number of attendees at each session grew over time, with the exception of December 2019 (when time conflicts due to holiday celebrations were cited by many as a reason children did not attend). A growing number (again, with the exception of December 2019) of students were retained from each session to the next. Within each workshop, attendance on any given day varied. In iterations where two sessions were offered (one in the morning and one in the afternoon), some afternoon sessions had low attendance. Moreover, in at least one case, a long outing (to Monte Albán) on the previous day had tired out participants who opted not to attend another long outing (to *Piedra del Sapo*) the subsequent day. Parents suggested that in the future it would be

worthwhile to ensure that activities were more balanced across the weeks of the session.

6.3.4 Product

Having considered the context in which the program was designed, design choices made, and the realities of their implementation, I would like to consider the outcomes of the program to this point, paying particular attention to the three main questions regarding the impact of the Zapotec language workshops outlined at the beginning of this chapter.

Changes in attitudes towards Zapotec. Based on the interview data (section 6.2.2), it seems that there has been an increase in positivity associated with Zapotec language learning and use. Parents noted that their children were more willing to try speaking Zapotec, and children noted feeling good after having attended the workshops. This is in line with the program logic model, as one hope was that the workshops would lead to increased interest in speaking Zapotec. At the same time, some parents still expressed prescriptivist ideas about Zapotec, noting that benefits of the course included their children learning how to pronounce Zapotec the way it should be pronounced. This was not an attitude that was promoted through the course, as Rosita and I instead sought to promote an appreciation of a diversity of ways of speaking Zapotec, but it remains present among at least some parents.

Changes in Zapotec language abilities of participants. Whether or not the Zapotec language abilities of participants changed remains an open question. It seems likely that students gained skills in writing Zapotec, as this was frequently cited as something students and parents appreciated about the workshops (section 6.2.2). It is important to note again that Rosita and I allowed students to write however they felt most comfortable, so student writing shows a variety of different strategies for representing sounds in Zapotec. However, students were able to read their writing aloud for community members at the end of the workshop, indicating that these inconsistencies did not create barriers to each students' abilities to understand what they had written.

The LFSE data provide some data that suggest increases in the Zapotec language abilities of participants, as some children recorded a greater variety of language following the workshops versus before (section 5.2). Moreover, some participants recorded themselves singing songs that had been covered in the course (section 5.2). However, the LFSE data were not representative of the entire linguistic environment of the participants, since they recorded only a fraction of their waking days, and as a result these differences could be due to sample bias.

Changes in contexts for Zapotec use. It seems that there has been a significant shift in the contexts for Zapotec use. For one, many parents mentioned their children initiating more conversations in or about Zapotec (section 6.2.2). This is a notable shift, as use of Zapotec between parents and children can greatly help with sustainable transmission of the language.

In addition, children's performative speech into the recorder during the LFSE recordings represents a new context for children's Zapotec use (section 5.2). While this was not the goal of the LFSE recordings, it nevertheless represents a new context for Zapotec use. At

the same time, this is not a particularly sustainable context for language use, as children at present only have access to the recorders for a couple of days per year when I issue them for LFSE collection.

The use of Zapotec as part of the Zapotec workshops also represents an increase in contexts of use for Zapotec. The workshops also opened up opportunities for interaction in Zapotec between peers. While children did mostly use Spanish with one another during the course, they did also use Zapotec during certain activities. These conversations were sometimes strongly structured (as in the use of Zapotec during the "Go Fish!" activity described in section 4.6.4), but in other cases they were more freely conversational in nature (as in the conversation between Gerardo and Eduardo in section 5.1.2). It is unclear if these interactions will continue beyond the workshops. However, their presence within the workshops is still a step towards greater Zapotec language use among children.

6.4 Summary of evaluation findings

In analyzing the evaluation data, I believe that there has been alignment overall between program goals, curriculum, assessment, and evaluation overall. As Biggs (1998) and Lau (2016) note, for learning to be effective, this alignment is crucial, as is the involvement of learners in engaging with the curriculum, teaching, and assessment/evaluation. Despite overall alignment, there are still areas for improvement within the Zapotec language workshops. In this section, I highlight some strengths of the program and identify areas for improvement that emerged from the formative evaluation, connecting them to the program logic model in figure 4.5.

The long-term goal of the Zapotec language workshops (from my perspective, based on numerous conversations with stakeholders) is to contribute to sustainable language transmission and use, via intermediate steps of greater use of Zapotec among children and adults and a long-term commitment to learning and using Zapotec among participants. While the changes that were noted in the previous section are small, they nevertheless represent steps in the direction of positive change. New areas for Zapotec use, greater interest in Zapotec learning among participants, and increasing participation in the program over time reflect steps towards achieving those intermediate steps.

Language workshops and LFSE recordings increased contexts for Zapotec use. Children's use of Zapotec in the language workshops and LFSE recordings represent new domains for Zapotec use, but these domains are not part of typical language transmission and use in Teotitlán. At the same time, parents also reported increases in their children's willingness and interest in learning Zapotec and speaking Zapotec with their parents and other adults—contexts which are typically part of intergenerational language transmission in Teotitán. Perhaps, then, these new contexts represent spaces where children feel comfortable practicing and experimenting with their emergent Zapotec language skills and the building confidence required to put them into practice. For example, the LFSE recordings provided an unexpected space where learners appeared to be using the recorder as an audience with whom

they could practice using Zapotec. Moreover, by tasking learners with recording their speech as part of the LFSE data collection, learners may have felt authorized to use Zapotec in this context. Thus, while LFSE recordings may not result directly in more intergenerational Zapotec language use, they are still, overall, in alignment with program goals by providing a stepping-stone towards sustainable language use.

Increasing production of Zapotec language materials could improve outcomes. In terms of outputs, there is also room for improvement in the quantity of Zapotec used. While children did create some materials that they brought home, parents requested additional materials (particularly those with written Zapotec texts) as tools to facilitate Zapotec interaction in the home. While the materials that were used within the classroom and which were available at the library do provide opportunities for children to use Zapotec, this is not in complete alignment with the ultimate goal of bringing Zapotec into children's homes. More materials that could be used between parents and children would improve the alignment between program goals and curricular implementation.

Community building was central to positive outcomes in the Zapotec language workshops. Another change that could improve alignment is better integrating parents and other adults into the workshops. Given that children and parents both emphasized the importance of community-building throughout the workshops, I believe that establishing a stronger community of learners would result in greater learner investment and learning outcomes. Instead of compartmentalizing parent participation into certain activities, it may be helpful to be more inclusive of parents in future iterations of the course. At the same time, parents also reported not having sufficient time to participate in more activities, so creating a more welcoming environment may not be enough to garner additional parent participation in the workshops. Nevertheless, promoting parent participation may help to bridge the gap between what students learn and practice in the workshops and what they do with language in their homes. It will also likely increase students' exposure to Zapotec, as the vast majority of parents involved in the workshops are Zapotec speakers. Furthermore, at least some of the parents who are not Zapotec speakers have expressed interest in learning more, and may be able to learn language skills and confidence alongside their children. One possible issue with greater presence of parents is that it may interfere with peer-to-peer interactions in Zapotec; however, while I have observed very few (if any) interactions between children in Zapotec without an adult present during the workshops, I have, on the other hand, observed many instances of a group of children using Zapotec with an adult, as well as some instances of children speaking in Zapotec together when accompanied by a Zapotec-speaking adult. Thus, it seems likely that greater parent participation could lead to greater Zapotec exposure and use.

Valuing all stakeholders' expertise enhanced the design, implementation, and outcomes of the initiative. Finally, there is room for improvement in our conceptualization of the resources that are available for program implementation. In the current formulation of the logic model, there are a number of stakeholders—students, teachers, Zapotec speakers, parents—as resources for the program. However, each of these individuals is bringing a wealth of resources that are not currently highlighted in the program logic model.

As discussed in section 1.2, each individual brings their unique perspective and expertise to the program, and in the abundance-based approach that underpins this program, it is important to celebrate and highlight stakeholders' expertise and talents. One concrete way that this can be implemented is through recognizing the Zapotec skills that students are already bringing to the workshops, as well as their significant linguistic abilities in other languages which can be leveraged to enhance their Zapotec learning. In future iterations of the program, Rosita and I can be more cognizant of how we frame Zapotec language learning, positioning learning new skills as opportunities to add to their knowledge. This would create better alignment, as a greater focus on additive language learning and the abundance of students' linguistic skills should help in creating a learning environment that affirms students' identities. In particular, this would affirm students' identities as learners, positioning them not in a deficit framing of lacking Zapotec skills, but instead positioning them in an abundance framing of being successful learners of Zapotec. Overall, affirming students' identities will lead to greater learner investment, which in turn will support greater learning outcomes and more Zapotec language use.

Engaging learners in the assessment and evaluation process could increase use of formative feedback. In addition, it may be worthwhile to strategize ways to more actively engage students in the assessment and evaluation process, which both Biggs (1998) and Lau (2016) suggest is an important step in ensuring that formative feedback is productively utilized by students. Fortunately, the principles of PAR and deliberative democratic evaluation both encourage discussion and involvement of a wide variety of stakeholders, including learners. By improving the equity through which PAR and deliberative democratic evaluation are carried out and working to allow learners to more freely voice their opinions and engage in dialogue, they will be able to engage with feedback on their learning and on the development of the program. This should, in turn, help them to utilize feedback from assessment and evaluation in ways that support their own Zapotec language learning goals.

Chapter 7

Conclusion

In this chapter, I present several overarching themes that have emerged through this dissertation project (section 7.1) before outlining areas where future research could build on this work to further our understanding of language revitalization both in Teotitlán and in language revitalization contexts more broadly (section 7.2).

7.1 Overarching themes

The main theme emerging from this dissertation reinforces findings from previous studies (Henderson et al., 2014; Hermes et al., 2016; Leonard, 2012; Zahir, 2018) that illustrate how meeting language revitalization goals often relies on more than simply building the linguistic skills of language learners. If the goal is to increase language *use* (as was the goal of the Zapotec language workshops for kids in Teotitlán), learners must not only have the language skills required to participate in conversations, but they must also find social environments in which their language use is accepted by others in the community of language users. To understand how language revitalization practitioners might create such supportive environments for language use, the concept of *learner investment* (Norton Peirce, 1995) proved useful in the Zapotec language revitalization program, as it allowed those of us involved in planning language revitalization activities to consider not only learners' internal *motivations* for engaging in Zapotec learning and use, but also factors outside of the learners themselves that could impact their desire to learn and use the language.

For example, while many learners were highly *motivated* to learn and use Zapotec, when they found that their Zapotec use was not positively received by others, their *investment* in language learning and use was negatively impacted. Focusing not only on learners' motivations, but also on building a community of Zapotec language users that was supportive of learners as they sought to increase their use of the Zapotec language allowed the workshops to address a key barrier to Zapotec language use among children: children are often hesitant to use their emergent Zapotec skills unless they perceive their identities as successful Zapotec learners and Zapotec language users will be accepted by others in their environment.

Because the Zapotec workshops for kids sought to increase Zapotec use among children in both private and public spaces throughout Teotitlán, it proved crucial to engage in community building activities that brought together not only child learners, but also parents, other family members, and community members more broadly. This broad community of language learners and language users then provided an environment where emergent Zapotec users were able to try out their Zapotec language skills in low-stakes environments, receive supportive feedback, and strengthen their knowledge and use of the language.

Creating low-stakes environments for Zapotec use was a key element that accompanied instances of greater Zapotec use among children in this study, and was achieved in two contexts: (1) when learners were in more private spaces and (2) when learners were surrounded by a community where Zapotec language 'mistakes' were treated not as negative, but instead as positive learning opportunities. Reported language use provided evidence that Zapotec was more commonly used in private spaces where children and adults interact, such as doing chores at home, rather than in public spaces like the store or market (section 2.3). These reports were corroborated by long-format speech environment (LFSE) recordings, in which children were heard using Spanish in more public environments (such as attending a large party) while they used both Zapotec and Spanish in the privacy of their own home (section 5.2). Similarly, in the classroom context, it was possible to observe differences in the complexity of language used in more public and more private contexts (section 5.1.2). In more public contexts (such as speaking to an adult Zapotec speaker in front of the entire group of learners), learners often produced simple responses (such as one-word answers with uninflected nouns or adjectives), while in smaller group conversations, more grammatical complexity emerged. Thus, increasing the presence of more private, low-stakes contexts may support increased language use.

LFSE recordings may be one such context that can provide the type of privacy that supports language use. When learners were provided with recorders as part of the LFSE data collection process, they not only used the recorders to record their 'naturalistic' language use by wearing the recorder and going about their normal day, as I had initially intended. They also utilized the recorders to create a private space for Zapotec language practice, recording short Zapotec language 'performances' in which they often used a wider range of Zapotec skills than they had shown in more public spaces such as the classroom. By inviting children to record their language use, at least in this case, it was possible to provide an additional low-stakes environment for children to practice and experiment with their emergent Zapotec language skills. Thus, while intended as a method of data collection, LFSE recordings turned out to be additionally useful as a revitalization tool on their own by providing a new, private context in which learners appeared to feel authorized to use Zapotec.

Nevertheless, if the goal of language revitalization is to increase language use not only in private, but also in public spaces, focusing on building Zapotec use in private contexts alone is not sufficient. In order to promote language use in public, it can be useful to build spaces where learners are supported in trying out their emergent language skills—including making 'mistakes' in the language. This was supported mainly through community building activities, including outings where members of the learning community got to know one

another, as well as conversations (both more formal conversations, such as through focus groups and *photovoice*, and informal conversations) where learners and speakers were able to share some of their goals for, as well as barriers to, their language use. As members of the learning community gained trust with one another, they were able to provide feedback on each others' language use in a supportive way. This included helping one another to remember certain terms in Zapotec (section 4.6.6), encouraging one another to try using Zapotec (section 4.6.4), and showing patience when a learner misspoke or was not immediately able to communicate their intended message in Zapotec (section 5.1.2).

Another way to reduce the stakes of language use is to focus on formative program evaluation rather than summative assessment of individual learners. Formative assessment is already built in as a component of some of the key pedagogical practices, such as communication-based instruction and task-based language learning (section 3.5.1), that were used in the Zapotec workshops, as both of these techniques allow for learners to be assessed through their completion of a task involving interaction with speakers in the target language. As learners work to complete the task, they receive formative feedback through speakers' responses to their language use. Such formative feedback may be more useful than common assessment metrics (like oral language proficiency interviews or other measures of language skills) as a means of evaluating the success of language revitalization programs. Direct measures of language skills may have two shortcomings. First, assessments of individual learners have the potential to be high-stakes and to negatively impact learner investment if the assessment results do not align with the learners' self-perception of their own language skills. While such individual assessments may be required in certain programs (such as formal educational settings or as a result of funding requirements), one finding of this study was the value of focusing not on individual assessment, but on program evaluation more holistically, and doing so from a formative framework with the goal of iterative program improvement. In addition, assessments that focus on the acquisition of specific linguistic structures may be insufficient for fully understanding the effects of language revitalization programs. While they can provide useful information about the linguistic abilities of learners, they cannot shed light on language *use*. In Teotitlán, for example, LFSE recordings revealed high levels of Zapotec language skills for at least some participants, yet those participants did not use much Zapotec in public spaces, in the classroom, or with their peers. Assessments of language skills may, then, provide a misleading picture of language revitalization outcomes. In this case, for example, examining language skills may result in a conclusion that language revitalization is no longer needed, as learners have acquired language skills; however, language *use* could still be increased, and may benefit from the support of ongoing language revitalization initiatives.

A final key theme that emerged through this dissertation study was the importance of framing language revitalization through a lens of abundance. When children attended the Zapotec workshops, they were not starting from zero, but instead brought with them their existing knowledge and experiences, including their Spanish language skills as well as experience in other areas, including arts, song, and cultural practices. By viewing learners not as deficient Zapotec speakers, but instead as successful learners and experts in different

domains, learners were able to draw on their experiences and expertise and use that as a scaffold upon which they could add additional Zapotec language experience and knowledge. This can be seen in student-generated learning materials, such as identity texts, that—rather than limiting students to produce works that were strictly monolingual in Zapotec—allowed learners to exercise agency in how they wished to bring together their various linguistic skills to create stories that they could share with their community. Moreover, viewing learners' diverse skills as assets to Zapotec learning and use was particularly helpful given the mixed-levels makeup of the workshop participants. While some participants were confident users of Zapotec, others had little experience; while some were teenagers with strong writing skills, others were preliterate preschoolers. In this context, allowing for learners with different levels of experience to build on the skills that they *do* bring to the group—whether the confidence to write a paragraph in Zapotec or the ability to draw or color images—created a welcoming space where all were authorized to contribute to the learning process.

This abundance framing may also be useful in terms of promoting an additive or translingual view of language learning. Learners in the Zapotec workshops interacted using all of their language abilities, and their use of Zapotec—even when they produced just one Zapotec-phonologized word borrowed into an otherwise Spanish sentence—was met with Zapotec responses from parents. This suggests that all Zapotec language skills matter, as even one word can begin a conversation in which a learner can gain greater access to contexts for Zapotec use. Moreover, the use of Spanish alongside Zapotec did not appear to be a barrier; instead, as long as any Zapotec was used, learners were provided an opportunity to hear (and potentially respond) in Zapotec. This suggests that the enforcement of strict boundaries between languages (such as the creation of a "Zapotec-only" environment) may not be necessary to promote Zapotec language use in Teotitlán. Instead, such boundary-making may provide an impediment to learners' Zapotec use. For example, if a learner does not feel authorized to use a Zapotec word in an otherwise Spanish sentence, they may instead use all Spanish, which (based on the observed language use in this study) may result in a Spanish response from their interlocutor. Meanwhile, using the Zapotec word would have likely resulted in a Zapotec response, thus opening up an opportunity for Zapotec learning and use.

At a higher level, viewing language revitalization initiatives themselves through a lens of abundance was also useful in this case. In Teotitlán, there is a vibrant tapestry of initiatives aimed at promoting Zapotec through an assortment of strategies targeted for different audiences. These include efforts in public schools (section 4.2.2), within the town of Teotitlán del Valle (section 4.2.3), and in collaboration with efforts that go beyond Teotitlán (section 4.2.4). I argue for viewing the abundance that these initiatives demonstrate: each contributes in a different way to an overarching community goal to see Zapotec use maintained and strengthened within the community. As I illustrated in figure 1.3, I envision equitable collaboration as involving the participation of diverse stakeholders with varying amounts of commitment to different projects that suit their own interests and needs. Instead of limiting ourselves to identifying a single "best practice" or way of achieving sustainable Zapotec language use in Teotitlán, stakeholders involved in this Zapotec language revitalization project

(myself included) focused on how an abundance of initiatives can utilize the skills, expertise, and interests of diverse stakeholders and contribute in different ways to that goal.

7.2 Future research

In future work, it would be useful to gain a deeper understanding of how *all* stakeholders—not just learners—may become more or less invested in language revitalization. Understanding, for example, the factors that increase or decrease investment of parents, teachers, and other adults who might participate in language revitalization initiatives could provide further insights into how to promote abundance framings of language revitalization and to build community between these adults and child learners. In this work, I have focused on how reactions (from adults and other community members) to children's attempts at Zapotec use have either advanced or inhibited children's investment in language learning and use. While *investment* is typically discussed in relation to the learner, it may be beneficial to consider the investment that other stakeholders have in the project, and how their investment may shift depending on the reactions of others. Consider parents and children as an example. In this work, I focused on how parents' positive reactions to children's emergent Zapotec use enhanced those children's investment in their learning, but what impact does a child's behavior have on their parents' investment in using Zapotec with them? When a child refuses or asks to speak Zapotec, does this affect the adults' investment in using the language with the child?

Because of the socially-embedded nature of language learning, it would be useful to apply PAR methodologies to obtain a deeper understanding of what factors might enhance adults' willingness to engage in a positive manner in Zapotec with children. Some suggestions have already been raised here: when children started conversations using any amount of Zapotec, for example, adults continued the conversation in Zapotec (chapter 5). It seems, then, that children's attempted use of Zapotec—even as a single word (or a phonologized borrowing) in an otherwise Spanish sentence—influences adults' behavior and increases children's access to Zapotec. But more broadly, what factors encourage adults to use and accept the Zapotec attempts of children? How do adult speakers (and parents and guardians particularly) identify themselves with respect to their Zapotec-learning children? Does the fact that they have children who are not yet frequent users of Zapotec in public align with their own self-identification and expectations for their children?

Moreover, an examination of stakeholder investment in language learning is not only relevant in Teotitlán, but in language revitalization contexts more broadly. It would be useful to examine to what extent the findings of this study can be replicated in other contexts. For example, how might learner investment differ in a context where children and parents are *both* learning the target language (unlike in Teotitlán, where most parents were already speakers). In that situation, potential conflicts between overlapping roles may interfere with investment. For example, in many contexts, individuals in the role of 'parent' may also take on the role of 'teacher' and 'children' the role of 'learner.' However, in some cases children

have acquired more of the target language than their parents; in this case, the roles of 'child' and 'teacher' may overlap while 'parents' are 'learners'—a potentially uncomfortable position for a parent to be in. In such a circumstance, what techniques could be used to ensure that parents remain invested in the language learning process and feel that their identities as parents are held in tact?

Better understanding this dynamic relationship between parents and children may also shed light on a further question, which is how children's learning and use of language may shift over their life cycle. As discussed in section 5.2.2.3, some parents in Teotitlán expressed the belief that their children would come to use Zapotec once they became adolescents and took on responsibilities within the community that are expected to be carried out in Zapotec. Given the data presented here, which shows that some children have Zapotec language skills but choose not to use the language in many instances, it is certainly possible that some or all such speakers will come to use Zapotec more widely once it is required of them. At the same time, there are many children who do not yet seem to be able to carry out conversations in Zapotec, and the fact that there are already some adults in Teotitlán who did not emerge as Zapotec speakers at adolescence despite being raised in the community, but instead remain monolingual Spanish speakers, suggests that more than growing up in Teotitlán (and as a result having access to Zapotec language) is required to ensure Zapotec language acquisition and use. Documenting patterns of language acquisition and use across childhood may help us understand under what circumstances emergence as a Zapotec speaker may take place among adolescents, and those circumstances could then be the focus of future revitalization efforts.

Of course, the question of how language use may shift over an individuals' lifetime is not relevant only in the context of Teotitlán del Valle. As individuals take on new roles—whether as leaders in communities where use of a particular language is expected, or as students in an immersion school, or as parents who have committed to speaking a certain language with their children at home—their language use may also shift. While anecdotal evidence from Teotitlán suggests that pressure to use a particular language within a given role can contribute to increasing use of that language, this conclusion nevertheless stands at least partially in contrast to the recommendations laid out in this study to lower the stakes of language use and encourage learners to draw from all of their language repertoires to communicate in ways that allow them to affirm their identities. Research that can further probe how these two conclusions may work together or at odds with one another would be useful for understanding how to best support language revitalization.

While this study focuses on children learning Zapotec in Teotitlán del Valle, I believe that utilizing a methodology such as PAR, through which a diverse range of stakeholders can collaborate on the design, implementation, and evaluation of language revitalization programs, can also be useful in other revitalization contexts. Moreover, I hope that others involved in language revitalization will build on the insights presented here as they develop future revitalization initiatives. As this project has progressed, I have come to more deeply appreciate the importance of how the project of language revitalization is framed more generally. All of the stakeholders involved in this work—and particularly the children who

have dedicated so much time and effort to participating in the workshops—bring their own wealth of personal experiences that enhance the revitalization process. By centering the abundance of skill and knowledge that children bring to the classroom, they have become more invested in their own learning. Instead of conceiving of Zapotec learners as working to fill a deficit in their linguistic knowledge or trying to speak Zapotec exactly like the adult Zapotec speakers around them, learners can instead be seen as adding to their existing linguistic repertoire. They can then rely on *all* their linguistic resources and use their language skills creatively to achieve self-expression. Children are able to learn when they are safe, respected, and valued, and by shifting to positive framings that honor children's identities as successful learners, creators, and holders of knowledge, language revitalization practitioners can create environments in which language learning and language use can take place more successfully.

Appendix A

Interview Guides for A Interviews

A.1 Guide for children

1. What language do you think kids from Teotitlán use more in each of the following situations?
   ¿Cual lengua piensas que los niños de Teotitlán ocupan más en las situaciones siguientes?

   a) Eating breakfast
      Comiendo el desayuno
   b) Eating lunch
      Comiendo la comida
   c) Eating dinner
      Comiendo la cena
   d) Working in the field
      Trabajando en el campo
   e) Weaving
      Haciendo tapetes
   f) Preparing food
      Preparando comida
   g) At school
      En la escuela
   h) At church
      En la iglesia
   i) Playing at home
      Jugando en casa
   j) Visiting a neighbor
      Visitando a un vecino

k) Vising a relative
Visitando a un familiar

l) Going to Tlacolula[1]
Yendo a Tlacolula

m) Going to Oaxaca City
Yendo a Oaxaca

n) Talking on the phone
Hablando por teléfono

o) Sending messages on the internet or cell phone
Mandando mensajes por internet o celular

p) At the library
En la biblioteca

q) On a walk in the woods
En una caminata por el bosque

r) Greeting someone on the street
Saludando a alguien en la calle

2. How hard do you think it would be for a kid to speak in Zapotec...
¿Qué tan difícil opinas que sería que un niño habla en zapoteco...

a) ...with their parents during a walk?
...con sus papás durante una caminata?

b) ...with a relative or neighbor about their weaving?
...con un familiar o vecino acerca de sus tapetes?

c) ...with someone that they see on the street?
...con alguien que se encuentra en la calle?

d) ...with their friends in Zapotec class?
...con sus amigos en el curso de zapoteco?

e) ...with their parents at home?
...con sus papás en casa?

f) ...with their siblings at home?
...con sus hermanos en casa?

Extremely easy / somewhat easy / neither easy nor difficult / somewhat difficult / extremely difficult
Muy fácil / más o menos fácil / ni fácil ni difícil / más o menos difícil / muy difícil

[1]Tlacolula is another, larger Zapotec town in the Tlacolula Valley. It is famous for its large Sunday market.

3. How often do you speak Zapotec in following situations?
   ¿Con qué frequencia hablas zapoteco en las situaciones siguientes?

   a) Greeting someone on the street
      Saludando a alguien en la calle
   b) At the market
      En el mercado
   c) Hiking with your parents on Picacho[2]
      Caminando al Picacho con tus papás
   d) With friends
      Con los amigos

   Never / sometimes / about half the time / most of the time / always
   Nunca / a veces / aproximadamente la mitad de las veces / mayoría de las veces / siempre

4. What were the last three conversations you had in Zapotec? What were the last three things that you talked about in Zapotec?
   ¿Cuáles fueron las últimas tres conversaciones que tuvise en Zapoteco? ¿Cuáles fueron las últimas tres cosas de que hablaste en zapoteco?

5. Who are the five people that you speak with most? What language do you use when you speak with them? Do you ever use a different language? When?
   ¿Quiénes son las cinco personas que quienes hablas más? ¿Qué lenguas usas cuando hablas con ellos? ¿A veces usas otra lengua? ¿Cuándo?

6. What do you do when you want to learn how to say something new in Zapotec?
   ¿Qué haces cuando quieres aprender como se dice algo en zapoteco?

7. What are you doing each hour of the day and what language are you mostly using?
   ¿Qué estás haciendo cada hora del día y qué lengua estás usando más?

8. Was there anything you told your parents about the course? For example, something you liked, something you didn't like, an activity that you found interesting or boring? Did you talk about any activities? Which ones? Why?
   ¿Había algo que dijiste a tus papás alrededor del curso? Por ejemplo, ¿algo que te gustó, que no te gustó, una actividad que te pareció interesante o aburrido? ¿Qué les dijiste? ¿Hablaste de alguna activiada? ¿Cuál? ¿Por qué?

9. Why did you come to the Zapotec course?
   ¿Por qué te integraste en el curso de zapoteco?

[2]Picacho is a local mountain.

10. Is there anything in particular that you want to learn from the course?[3]
¿Hay algo en particular que quieres aprender durante el curso?

11. Would you recommend to your friends that they come to the course? Why?[4]
¿Recomendarías a tus amigos que vienen al curso? ¿Por qué?

12. What might make it easier for you to speak in Zapotec with your parents?
¿Qué piensas que facilitaría que hablas en zapoteco con tus papás?

13. How interested are kids in Teotitlán in speaking Zapotec? Extremely interested / very interested / moderately interested / slightly interested / not interested at all
¿Qué tan interesados son los niños en Teotitlán en hablar zapoteco? Profundamente interesados / muy interesados / más o menos interesados / poquito interesados / no interesados

14. What languages do you speak and how well do you speak them? I can say everything I want to say / I can say more than half of what I want to say / I can say less than half of what I want to say / I can't say any of the things I want to say
¿Cuáles son las lenguas que hablas y que tanto manejas cada lengua? Puedo decir todo lo que quiero decir / puedo decir más que la mitad de lo que quiero decir / puedo decir menos que la mitad de lo que quiero decir / no puedo decir nada de lo que quiero decir

A.2 Guide for adults

1. What language do you think kids from Teotitlán use more in each of the following situations?
¿Cual lengua piensa Ud.[5] que los niños de Teotitlán ocupan más en las situaciones siguientes?

   a) Eating breakfast
   Comiendo el desayuno

   b) Eating lunch
   Comiendo la comida

   c) Eating dinner
   Comiendo la cena

   d) Working in the field
   Trabajando en el campo

[3] In the A1 interviews (before and during the course, this was asked in present tense; in the A2 interviews (after the course), it was asked in the past tense.

[4] This question was asked only in the A2 interviews after the course.

[5] Depending on my relationship with the interviewee, I sometimes used the formal *Ud.* and sometimes used the informal *tú*.

e) Weaving
Haciendo tapetes

f) Preparing food
Preparando comida

g) At school
En la escuela

h) At church
En la iglesia

i) Playing at home
Jugando en casa

j) Visiting a neighbor
Visitando a un vecino

k) Vising a relative
Visitando a un familiar

l) Going to Tlacolula
Yendo a Tlacolula

m) Going to Oaxaca City
Yendo a Oaxaca

n) Talking on the phone
Hablando por teléfono

o) Sending messages on the internet or cell phone
Mandando mensajes por internet o celular

p) At the library
En la biblioteca

q) On a walk in the woods
En una caminata por el bosque

r) Greeting someone on the street
Saludando a alguien en la calle

2. How hard do you think it would be for a kid to speak in Zapotec...
¿Qué tan difícil opina Ud. que sería que un niño habla en zapoteco...

a) ...with their parents during a walk?
...con sus papás durante una caminata?

b) ...with a relative or neighbor about their weaving?
...con un familiar o vecino acerca de sus tapetes?

c) ...with someone that they see on the street?
...con alguien que se encuentra en la calle?

d) ...with their friends in Zapotec class?
...con sus amigos en el curso de zapoteco?

e) ...with their parents at home?
...con sus papás en casa?

f) ...with their siblings at home?
...con sus hermanos en casa?

Extremely easy / somewhat easy / neither easy nor difficult / somewhat difficult / extremely difficult
Muy fácil / más o menos fácil / ni fácil ni difícil / más o menos difícil / muy difícil

3. How often do your children speak Zapotec in following situations?
¿Con qué frequencia hablan sus niños en zapoteco en las situaciones siguientes?

a) Greeting someone on the street
Saludando a alguien en la calle

b) At the market
En el mercado

c) Hiking with their parents on Picacho
Caminando al Picacho con sus papás

d) With friends
Con los amigos

Never / sometimes / about half the time / most of the time / always
Nunca / a veces / aproximadamente la mitad de las veces / mayoría de las veces / siempre

4. What were the last three conversations you had with your child in Zapotec? What were the last three things that you talked about in Zapotec?
¿Cuáles fueron las últimas tres conversaciones que tuvo Ud. con su niño en Zapoteco? ¿Cuáles fueron las últimas tres cosas de que hablaron en zapoteco?

5. Who are the five people that your child speaks with most? What language do they use when they speak with them? Do they ever use a different language? When?
¿Quiénes son las cinco personas con quienes su niño habla más? ¿Qué lenguas usa cuando habla con ellos? ¿A veces usa otra lengua? ¿Cuándo?

6. What does your child do when they want to learn how to say something new in Zapotec?
¿Qué hace su hijo cuando quiere aprender como se dice algo en zapoteco?

7. What is your child doing each hour of the day and what language are they mostly using?
¿Qué está haciendo su hijo cada hora del día y qué lengua está usando más?

8. What are you doing each hour of the day and what language are you mostly using?
   ¿Qué está haciendo Ud. cada hora del día y qué lengua está usando más?

9. Have you noticed any changes in your child since they came to the language workshop? Can you describe the changes? Have there been any changes in how your child interacts with people in the market / around town / at home? Do you notice any changes in their language abilities or vocabulary?
   ¿Ha notado Ud. algún cambio en su hijo desde que empezó el curso de zapoteco? ¿Puede describir el cambio? ¿Ha sido un cambio en como su hijo interactúa con gente en el mercado / por el pueble / en casa? ¿Ha notado algún cambio en sus habilidades o vocabulario en zapoteco?

10. Did your child tell you anything about the course? What did they tell you? Did they talk about any activities? Which ones? How did you react? What did you think?
    ¿Mencionó su hijo algo acerca del curso de zapoteco? ¿Qué dijo? ¿Habló de una actividad? ¿Cuál(es)? ¿Cómo reaccionó Ud.? ¿Qué pensó Ud.?

11. Why did you send your child to the Zapotec course?
    ¿Por qué Ud. mandó su hijo al curso de zapoteco?

12. What did you want them to learn in the class?
    ¿Qué quizo que aprendiera en el curso?

13. Would you recommend to your friends that they send their children to the course? Why?
    ¿Recomendarías a tus amigos que mandan sus niños al curso? ¿Por qué?

14. What do you think might make it easier for kids to speak in Zapotec with their parents at home?
    ¿Qué piensa que podía facilitar que los niños hablan en zapoteco con sus papás en casa?

15. How interested are parents in teaching their kids Zapotec? Extremely interested / very interested / moderately interested / slightly interested / not interested at all
    ¿Qué tan interesados esán los papás en enseñar zapoteco a sus hijos? Profundamente interesados / muy interesados / más o menos interesados / poquito interesados / no interesados

16. How old are you?
    ¿Cuántos años tiene Ud.?

17. What languages do you speak and how well do you speak them? I can say everything I want to say / I can say more than half of what I want to say / I can say less than half of what I want to say / I can't say any of the things I want to say
    ¿Cuáles son las lenguas que habla y que tanto maneja cada lengua? Puedo decir todo

lo que quiero decir / puedo decir más que la mitad de lo que quiero decir / puedo decir menos que la mitad de lo que quiero decir / no puedo decir nada de lo que quiero decir

18. What languages does your child speak and how well do they speak them? They can say everything they want to say / They can say more than half of what they want to say / They can say less than half of what they want to say / They can't say any of the things they want to say
¿Cuáles son las lenguas que habla su hijo y que tanto maneja cada lengua? Puede decir todo lo que quiere decir / puede decir más que la mitad de lo que quiere decir / puede decir menos que la mitad de lo que quiere decir / no puede decir nada de lo que quiere decir

Appendix B

Interview guides for B Interviews

B.1 Guide for children

1. What languages do you speak?
   ¿Cuáles lenguas hablas?

2. How do you feel when you speak Spanish? Zapotec? Other languages?
   ¿Cómo te sientes cuando hablas español? ¿zapoteco? ¿otra lengua?

3. What languages do your parents speak?
   ¿Cuáles lenguas hablan tus papás?

4. What languages do you speak with your parents? When do you use each language more? With your siblings?
   ¿Cuáles lenguas hablas con tus papás? ¿Cuándo más se usa cada lengua? ¿Y con tus hermanos?

5. In your opinion, what is the role of Zapotec in Teotitlán del Valle?
   En tu opinión, ¿qué papel tiene la lengua zapoteca en Teotitlán del Valle?

6. Think of the spaces that you use each day. Which spaces seem more like Zapotec spaces? Which seem more like Spanish spaces?
   Piensa en los espacios que ocupas diario. ¿Cuáles espacios te parecen más al zapoteco? ¿Cuáles te parecen más al español?

7. What do you hope to see for the Zapotec language in the future?
   ¿Qué esperas ver con respeto a la lengua zapoteca para el futuro?

8. What did you think of the Zapotec course?
   ¿Cómo te pareció en curso de zapoteco?

9. What can we do to make the course better next time?
   ¿Qué podemos hacer para mejorar el curso para el siguiente?

10. What do you think of the field trips? What other field trips can we plan?
    ¿Cómo te parecen las salidas? ¿Qué otras salidas se pueden programar?

11. What do you do each hour of the day? Who do you talk with? What language do they speak to you in? What language do you respond in?
    ¿Qué haces cada hora del día? ¿Con quién hablas? En qué lengua te habla? ¿En qué lengua contestas?

12. Other comments? Suggestions? Doubts?
    ¿Otros comentarios? ¿sugerencias? ¿dudas?

B.2 Guide for adults

1. What languages do you speak?
   ¿Cuáles lenguas habla Ud.[1]?

2. How do you feel when you speak Spanish? Zapotec? Other languages?
   ¿Cómo se siente Ud. cuando habla español? ¿zapoteco? ¿otra lengua?

3. What languages do/did your parents speak?
   ¿Cuáles lenguas hablan/hablaron sus papás?

4. What languages do you speak with your children? When do you use each language more?
   ¿Cuáles lenguas habla Ud. con sus hijos? Cuándo más se usa cada lengua?

5. In your opinion, what is the role of Zapotec in Teotitlán del Valle?
   En su opinión, ¿qué papel tiene la lengua zapoteca en Teotitlán del Valle?

6. Think of the spaces that you use each day. Which spaces seem more like Zapotec spaces? Which seem more like Spanish spaces?
   Piensa en los espacios que ocupa Ud. diario. ¿Cuáles espacios le parecen más al zapoteco? ¿Cuáles le parecen más al español?

7. What do you hope to see for the Zapotec language in the future?
   ¿Qué espera ver con respeto a la lengua zapoteca para el futuro?

8. What did you think of the Zapotec course?
   ¿Cómo le pareció en curso de zapoteco?

9. What can we do to make the course better next time?
   ¿Qué podemos hacer para mejorar el curso para el siguiente?

[1]Depending on my relationship with the participant, I used either formal *Ud.* or informal *tú*.

10. Have you noticed any change in your child after the course?
    ¿Ha notado Ud. algun cambio en su hijo después del curso?

11. What do you think of the field trips? What other field trips can we plan?
    ¿Cómo le parecen las salidas? ¿Qué otras salidas se pueden programar?

12. What does your child do each hour of the day? Who do they talk with? What language does that person speak to them in? What language does the child respond in?
    ¿Qué hace su hijo cada hora del día? ¿Con quién habla? ¿En qué lengua le habla? ¿En qué lengua contesta?

13. Other comments? Suggestions? Doubts?
    ¿Otros comentarios? ¿sugerencias? ¿dudas?

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