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**HOME LITERACY EXPERIENCES OF PRESCHOOL CHILDREN ON THE  
AUTISM SPECTRUM GROWING UP IN MULTILINGUAL CONTEXTS**

A Dissertation in

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by

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## ABSTRACT

The United States and Germany are two predominantly monolingual countries with a significant number of multilingual speakers. Previous research on multilingualism in children on the autism spectrum has found no adverse effects on children's language and communication development but often excluded children with complex communication needs or exposure to more than two languages. Employing a multimodal, multidisciplinary understanding of literacy as a social practice, the current study aimed to analyze what literacy activities multilingual families of preschool children on the autism spectrum engaged in. In addition, the current study investigated what factors influenced parents' choices for their home language and literacy environment and to what degree multilingualism was represented in families' home literacy practices. The current study design combined four phases: (1) online survey, (2) follow-up interviews, (3) video recordings of home literacy practices, and (4) video-cue guided secondary interviews. Six primary caregivers of multilingual preschool children on the autism spectrum across the United States and Germany participated in the current study. Results from the four phases showed that participants engaged in multimodal literacy practices primarily guided by child interest. Home language environments were complex, with all participants reporting a non-dominant language as one of their primary household languages, but most children primarily communicated in the societal language. The societal language was reflected in at least some home literacy activities, even if it was not one of the family's languages of interaction. Service providers and future research should use strength-based and family-centered approaches to support multilingual families of preschool children on the autism spectrum.

*Keywords:* autism spectrum disorder, multilingualism, literacy, preschool

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**LIST OF ABBREVIATIONS**

<b>AAC</b>	Augmentative and Alternative Communication
<b>ABA</b>	Applied Behavior Analysis
<b>ADHD</b>	Attention-deficit/Hyperactivity Disorder
<b>ASD</b>	Autism Spectrum Disorder
<b>CCN</b>	Complex Communication Needs
<b>CLD</b>	Culturally and Linguistically Diverse
<b>IEP</b>	Individual Education Plan
<b>IPA</b>	Interpretative Phenomenological Analysis
<b>PECS</b>	Picture Exchange Communication System

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## CHAPTER 1

### INTRODUCTION

Multilingualism is a global phenomenon (Cenoz, 2013), with millions of children growing up in multilingual contexts (Grosjean, 2010). Nevertheless, despite the prevalence of this linguistic reality globally, culturally and linguistically diverse (CLD) children in certain countries are challenged to navigate predominantly monolingual environments in schools and other learning environments. Two key monolingual nations are the United States (U.S.) and Germany, both of which have growing numbers of multilingual children who have to navigate predominantly monolingual contexts (Grosjean, 2013; European Commission, 2012).

By 2025 one in four children in the U.S. will speak a first language other than English (National Education Association, 2020). While in Germany, nearly one in five minors grow up in homes where the dominant language is a language other than German (Der Informationsdienst des Instituts der deutschen Wirtschaft, 2021).

Being raised in a monolingual environment can present significant challenges for early-developing CLD children with autism spectrum disorder (ASD), a neurodevelopmental disorder (American Psychiatric Association, 2013) that affects children globally. For example, in the U.S. and Germany, estimated prevalence rates of ASD have been recorded at 2.76%, meaning one in 36 children (Maenner et al., 2023) and 0.60% (Bachmann et al., 2018), respectively, among children aged eleven and below.

In the U.S., one in four children on the autism spectrum are estimated to grow up in multilingual environments in which home languages contrast with those in schools and other learning environments (Trelles & Castro, 2019). To my knowledge, no estimates are available on the number of autistic children who grow up in multilingual contexts in Germany. However, considering that approximately one in five minors have a primary home

language other than German (Der Informationsdienst der deutschen Wirtschaft, 2021), it is reasonable to estimate that a similar number of children on the autism spectrum grow up in multilingual contexts in Germany.

Autism spectrum disorder is a neurodevelopmental condition that significantly impacts multiple facets of a child's development (American Psychiatric Association, 2013). A hallmark characteristic of ASD is areas of development in social communication (American Psychiatric Association, 2013), which in turn, can affect literacy development. In the context of the current study, literacy is considered a social practice used to construct and deconstruct knowledge (Larson & Marsh, 2015). Studies on the preference of members of the autistic community regarding the use of person-first and identity-first language have concluded that the terms "autistic" and "on the autism spectrum" seem to be the most supported and least offensive terms (Bury et al., 2023; Kenny et al., 2016). In my wish to respect the preferences of members of the autistic community, I flexibly use both language preferences.

Language skills such as phonological awareness (Anthony & Francis, 2005) have been found to affect the development of reading skills (Lerner & Lonigan, 2016). Quality early literacy experiences contribute to children's language and cognitive development (Ard & Beverly, 2004; Raikes et al., 2006). Shared book reading and related literacy interventions have been found to positively affect children on the autism spectrum (Boyle et al., 2019) and children with complex communication needs (CCN; Yorke et al., 2018).

While shared book reading is an effective literacy intervention (e.g., Boyle et al., 2019), more research is needed on how the strategy affects the language and literacy development of CLD-autistic children. For example, in a review of studies that employed shared book reading as a strategy, Pico and Woods (2022) concluded that the way shared book reading was implemented decided whether the strategy positively affected the

vocabulary development in English for emergent bilinguals with Spanish as their primary language. In addition, an ethnographic study of three multilingual families' implementation of shared book reading found that families' practices are complex and include high levels of sibling interactions (Kibler et al., 2020).

Parents of autistic children have voiced insecurities regarding exposure to multiple languages' effect on their children's linguistic development (e.g., Hampton et al., 2017) and its eventual impact on literacy proficiency. Parents of monolingual children on the autism spectrum have also questioned effective practices to support their children's literacy development (e.g., Lanter et al., 2012b). Kibler et al. (2020) have argued that considering literacy as a social practice allows educators and researchers to understand how the cultural and sociolinguistic contexts influence families' literacy practices. For professionals to advise parents on how to incorporate evidence-based practices into their home literacy practices, practitioners first need to gain knowledge about the home literacy practices of families of young autistic children who grow up in multilingual contexts.

To date, studies have not captured the home literacy practices of multilingual families of children on the autism spectrum. Literacy development starts long before children enter school, with the home language and literacy environment playing an essential role in developing literacy skills. Focusing on preschool-aged children also allows the comparison of participants' experiences in two countries with significantly differing education systems. The current study aimed to address this gap in research by implementing a mixed-method design to gather information about the home literacy environments of preschool children on the autism spectrum who grow up in multilingual contexts. In this study, I define multilingual contexts as any setting that provides regular exposure to more than one language, including two or more languages being spoken in the family's home or the family's primary language is a language other than the official (or de facto) language where they live. The current study

recruited participants from the U.S. and Germany for comparison. These two countries were chosen because both (a) favor one dominant language of interaction, (b) historically have not recognized other languages in schools and institutions, and (c) have not produced evidence of literacy practices in multilingual families of children on the autism spectrum. In each country, the participants' multilingual home environment contrasts the literacy and language practices used by the dominant population. By centering preschool-aged children in this investigation, comparisons of participants' experiences in two countries with significantly differing education systems were made possible.

## **Theoretical Framework**

### ***Literacy***

Literacy today is a contested term, which reflects a long struggle to define literacy in politics, policy, research, and practice (Guerra, 1998). Traditionally, literacy refers to competencies related to encoding and decoding written language (Marsh, 2005). This definition has long undergirded schools and other formal learning environments.

**Developmental Approaches.** Research has identified several components of literacy skills and the connection literacy holds with language. For example, Gough and Tunmer (1986) identified listening comprehension and word identification as two elemental components of reading comprehension. While this simple view of reading still holds relevance today (Cervetti et al., 2020), other literacy models have highlighted additional components and their interrelationships with language, including phonological and orthographic processes (Adams, 1990; Perfetti et al., 2005).

Studies have found that phonological and morphological awareness correlate with reading skills (e.g., Ruan et al., 2018). Phonological awareness is the ability to reflect on and manipulate the units of sounds (Chung et al., 2019; Wyse & Goswami, 2013). Different levels of sound units include phonemes, syllables, and onset-rime (Chung et al., 2019). From



a developmental standpoint, awareness of syllables as sound units develops around three to four years, followed by intra-syllabic-awareness (Wyse & Goswami, 2013). The ability to reflect on and manipulate morphemes, the smallest meaning-holding phonological unit, and knowledge of a language's word formation rules are defined as morphological awareness (Kuo & Anderson, 2006). Morphological awareness consists of inflectional, derivational, and compound awareness (Kuo & Anderson, 2006).

In addition to the phonological (i.e., sounds) and orthographical (i.e., written) components of literacy, both Adams (1990) and Perfetti et al. (2005) highlighted the importance of context (e.g., family environment and preferences) and the connection that literacy has with language development. Furthermore, external factors, such as social context, and internal factors, like potential physical impairments, have also been identified as essential components of literacy development (Light & McNaughton, 2020).

**Sociocultural Approaches.** However, Comber (2016) highlighted that literacy is never a neutral, content-free practice and criticized that schooling often treats literacy as a generic skill. In a similar critique, Pahl (2014) highlighted that many literacy practices are not considered within societal institutions. Recently, literacy definitions have been extended to include a more comprehensive reflection of diverse semiotic discourses (Marsh, 2005) and different media, such as computer literacy.

Recognizing the political aspect of narrowed literacy practices, I turn to a multidisciplinary, multimodal theoretical literacy framework to ground the current study. This multidisciplinary framework draws from new literacy studies, digital literacy, and sociocultural theories of learning and considers multimodality a central aspect of literacy (Larson & Marsh, 2015).

The new literacy studies (New London Group, 1996) changed the conceptualization of literacy moving it from an instructional to a social, everyday practice in which literacy

knowledge is socially constructed and never value-neutral (Larson & Marsh, 2015).

Furthermore, the definition of literacy is expanded to move beyond a narrow and universal skill set only acquired through formal instruction and to acknowledge that literacy is contextual and is influenced by social interactions (Larson & Marsh, 2015).

A multidisciplinary, complex view of literacy has the potential to move away from the deficit model that focuses on the literacy skills children as missing concerning school literacy skills (Larson & Marsh, 2015). It also acknowledges that literacy exists in many contexts and languages (Pahl & Rowsell, 2010). Furthermore, a theory of multimodal literacy allows the inclusion of modes other than writing, for example, visual (Pahl & Rowsell, 2010) or oral representations (Flewitt, 2017). Building on this framework, this study employs a multidisciplinary multimodal definition of literacy, which encompasses oral literacy practices like storytelling, embodied literacies like acting out a story, singing, or playing games (Souto-Manning & Dice, 2009), audiobooks, and other forms of digital literacy, such as literacy apps. As Henward & Dong (2022) note, this includes the literacy young children produce as they consume digital content like podcasts and videos. In addition to traditional print-based early literacy practices like shared book reading and oral literacy practices, the current study also investigates the use of puzzles and games as potential routines that influence the home literacy environment of young bilingual children on the autism spectrum. For example, puzzles can help build memory skills and problem-solving (Queensland Government Department of Education, 2020). The current study considers whether and how caregivers might incorporate puzzles, games, and other media into home literacy routines with their young children on the autism spectrum.

### ***Early Literacy and Literacy Development***

Traditionally, literacy has been conceptualized developmentally, and within this framework, early literacy is considered a preparatory mechanism, always connected to skills

used in formal school learning. Building on a multidisciplinary, multimodal definition of literacy, early literacy is defined as a social construct that is more than a step on the path to becoming literate but rather a developmental state on its own (Gillen & Hall, 2013).

Conversely, a multiliteracy approach to early literacy concerns meaning-making for children in the here and now, always within specific social and cultural environments (Martínez-Álvarez & Ghiso, 2017). As has been well documented, children use textual tools (Dyson, 2008) and manipulate literacy tools in talk (Henward & MacGillivray, 2014), embodiment (Leander & Boldt, 2013), and drawing (Rech, 2018). They borrow media characters in and across multiple platforms to produce meaning in social contexts (Tobin & Henward, 2011). Today many children have access to many technologies, such as smartphones and tablets (Marsh et al., 2016). In accordance, a study that analyzed the digital skills of children under the age of eight across Europe found that it was the norm for participating children of all socioeconomic backgrounds to live in media-rich homes (Chaudron et al., 2018).

### ***Multilingualism and Language Policies***

**Multilingualism.** Multilingualism is defined as regularly using two or more languages or dialects (Grosjean, 2013; Petersen et al., 2012). Additionally, proficiency and exposure are two factors of multilingualism (Surrain & Luk, 2017). Both age and amount of multilingual exposure vary significantly among multilingual speakers (Luk & Bialystok, 2013). Age of exposure generally distinguishes between simultaneous bilinguals, who are exposed to two languages before age three, and sequential bilinguals, who are exposed to a second language after age three (Paradis et al., 2021).

**Code-switching and Translanguaging.** Multilingual speakers select the language of an interaction based on the context of the interaction (Wei, 2007). In some situations, bilingual speakers switch between languages within a conversation or sentence, with one language being grammatically integrated into another language (Wei, 2007). This

phenomenon, known as code-switching, is considered a skill, not a sign of confusion (Wei, 2007). Code-switching is therefore considered a natural occurrence in the communication patterns of bilinguals (Kaushanskaya & Crespo, 2019).

Rather than thinking of language as discreet and contained, linguists have positioned language acquisition in frameworks similar to multiliteracies. Translanguaging encompasses “multiple discursive practices in which bilinguals engage in order to make sense of their bilingual worlds” (García, 2009, p. 45). This definition includes code-switching but also extends beyond code-switching as it also encompasses language switching between different modes, for example, reading in one language but writing notes down in another language (García, 2009).

**Language Policies in Germany and the United States.** Germany and the U.S. are two primarily monolingual countries. However, both countries are also home to many multilingual speakers. According to the latest U.S. census data, 78% of households indicate English as their only language of interaction (Dietrich & Hernandez, 2022). Although a significant portion of the population is monolingual, more than 350 languages are spoken across the U.S., with varying numbers between different states and metropolitan areas (United States Census Bureau, 2015). One in five people (i.e., 67.8 million) report speaking a language other than English at home, with Spanish as the second most commonly spoken language, followed by Chinese (Dietrich & Hernandez, 2022).

In Germany, about 18% of children were estimated to grow up in a household with a primary language other than German in 2017 (Der Informationsdienst des Instituts der deutschen Wirtschaft, 2021). This number, however, varies between the 16 German states, with only 7% in Thuringia, 18% in Bavaria, and 35% in Bremen (Der Informationsdienst des Instituts der deutschen Wirtschaft, 2021). Turkish is the most common home language other

than German, followed by Arabic and Russian (Der Informationsdienst des Instituts der deutschen Wirtschaft, 2021).

Being a member state of the European Union influences Germany's linguistic landscape. English and German are two of the 24 official languages of the 27 European Union member states. In addition to the official languages, more than 60 indigenous and minority languages are spoken in Europe (European Commission, 2012). Four European countries have multiple official languages, while the remaining 23 have only one official language. German, the most common mother tongue in Europe (European Commission, 2012), is the only official language of Germany and Austria and one of the official languages of Belgium and Luxembourg.

English is the most frequent foreign language spoken by citizens of European countries that do not have English as an official language (European Commission, 2012). Most Europeans (88%) consider knowing a second language helpful, and 67% consider English one of the most valuable (European Commission, 2012). Ninety-eight percent of Europeans consider foreign languages useful for their children's future (European Commission, 2012). A little over half of Europeans (54%) reported being able to converse in at least one other language, with 66% of Germans stating that they speak at least one language other than German well enough to converse (European Commission, 2012).

Language policies are not neutral but frequently resemble complex political affairs. Despite the U.S. having no official language policy, multiple states have declared English as their official language (Macías, 2001). Policies such as Arizona Proposition 203, which restricts the language of instruction available to multilingual students (Wright, 2005), reflect how contested language can be, specifically in educational contexts. Germany does not explicitly address language policies at the constitutional level, and educational policies are also primarily handled at the state level, not at the federal level (Gogolin & Reich, 2001). The

number of CLD students also varies significantly between the sixteen German states (Der Informationsdienst des Instituts der deutschen Wirtschaft, 2021).

Another challenge related to language policies is reflected in the fact that the linguistic demographics of service providers rarely reflect the cultural and linguistic diversity of the children they support. The fact that the predominantly white and monolingual teacher workforce does not reflect the cultural and linguistic diversity of the student body has long been a topic in educational research (e.g., Ladson-Billings, 1999). However, a recent analysis has concluded that the teaching workforce is becoming less representative of the diversity of their students instead of more (Hansen & Quintero, 2019).

**The Intersecting Identities of Bilingualism and Disability.** The term intersectionality reflects the interrelation of multiple identity markers like gender and race and, with origins in Black feminist theory, was first coined by Kimberlé Crenshaw (1989) and Patricia Hill Collins (1990). Intersectionality analyzes oppression and privilege from between-group and within-group differences (May, 2015). In turn, intersectional competence aims beyond the understanding of diversity: It requires educators to critically reflect on how different sociocultural markers intersect and influence the day-to-day aspects of given contexts (Boveda & Aronson, 2019). Boveda and Aronson (2019) discussed the importance of examining the intersectionality of sociocultural markers of difference. Markers of difference are considered minoritized markers compared to markers of dominance held by a majority of the population in a given context (Boveda & Aronson, 2019). Growing up in a multilingual environment in a predominantly monolingual society and having a diagnosed disability are two examples of markers of difference.

The disproportionate representation of CLD students in special education has been debated in the field for decades (e.g., Artiles & Trent, 1994). Disproportionality is considered one of the most enduring issues in special education and remains one of the most critical

problems in special education today (Skiba et al., 2008). For example, research has found that autism is one of the categories in that students who acquire English as a second language in the U.S. are disproportionately represented (Estrem & Zhang, 2010). Although research has been concerned with addressing the disproportional representation of some student groups for decades, it has overall remained a static problem in special education (Cavendish et al., 2020). Researchers have argued that newer approaches, such as Disability Studies and Critical Race Theory, are needed to reconceptualize and address disproportionality (Connor et al., 2019). One of the recommendations for future research includes the need to highlight the intersectionality of demographic factors because "single descriptor research (such as disability) obfuscates issues of race and gender" (Connor et al., 2019, p. 739).

Within two predominantly monolingual contexts like the U.S. and Germany and a mismatch between the demographics of service providers and the families they support, cultural and linguistic diversity and a diagnosed disability are two markers of difference. The focus of the current study is the intersection of these two minoritized markers and the influence this intersection has on children's home literacy environment.

Autistic children from cultural and linguistic minority groups may face multiple layers of marginalization based on their cultural and linguistic background and disability status. For example, they may encounter systemic barriers to accessing appropriate diagnosis, treatment, and support services (e.g., St. Amant et al., 2018; Fong et al., 2022). Parents of CLD children on the autism spectrum have to navigate complex systems to receive the services they need. In addition, CLD parents and service providers from monolingual contexts might have different cultural backgrounds and speak different languages. Addressing the intersectional needs of CLD children on the autism spectrum requires an approach to their education that recognizes and addresses the unique circumstances these children and their families face.

## Literature Review

### *Language and Literacy Development of Multilingual Children*

Studies have indicated that while the timeline for language and literacy milestones may differ for bilingual children (Hammer et al., 2014; Paradis et al., 2021), simultaneous bilingual children generally exhibit similar rates of lexical development to their monolingual peers (Genesee, 2003; Petitto et al., 2001). Specifically, this matched rate of development is observed in early language milestones, such as babbling and the emergence of first words (Paradis et al., 2021). Like their monolingual peers, language acquisition in bilingual children is impacted by the quality and quantity of language input and language environments (Paradis, 2018). In addition, the simultaneous development of two languages is interdependent (Paradis et al., 2021), with cross-linguistic transfer occurring between both languages (McLeod et al., 2017). Both languages experience parallel activation even if only one language is actively used (Van Assche et al., 2009). For proficient bilinguals, the first language influences the second language, but the second language has also been found to influence the first language (Dussias & Sagarra, 2007; Van Hell & Dijkstra, 2002). This phenomenon is described as bidirectional crosslinguistic interactions (Kroll et al., 2015).

Theoretical frameworks on dual language reading development have suggested that the acquisition process of literacy skills is also interdependent (see a review by Chung et al., 2019). For example, looking at the influence of the home language environment of 132 Spanish-English bilinguals aged 7–12 years, Wagley et al. (2022) found that regular use of the home language Spanish not only promoted children's reading skills in Spanish but reading comprehension in Spanish also positively correlated with reading comprehension in English.

The timeline for developing phoneme awareness varies across different languages and depends on the degree of phonological complexity and orthographic consistency (Wyse &



Goswami, 2013). For example, the phonological complexity of syllables in English is different from many other languages, with consonant-vowel-consonant being the dominant monosyllable structure, compared to the consonant-vowel syllable structure that is the dominant syllable structure in languages like Spanish and Italian (Wyse & Goswami, 2013). In addition, languages such as Spanish and German have high orthographic consistency, which means that a letter generally corresponds with the same sound (Wyse & Goswami, 2013). However, in other languages, including English, a single letter can correspond with multiple sounds, challenging children's reading acquisition (Wyse & Goswami, 2013).

Like linguistic development, literacy development depends on both intrinsic and extrinsic factors. In addition to individual abilities, language skills, literacy experiences, and motivation are intrinsic factors relevant to literacy development (Light & McNaughton, 2020). The social context, the language context, and the cultural context of literacy learning are three crucial extrinsic factors influencing literacy experiences (Light & McNaughton, 2020). These three contexts are all reflected in the home literacy environment.

### ***Language and Literacy Skills in Children on the Autism Spectrum***

Language skills in children on the autism spectrum can range from complex communication needs to typical development (Hudry et al., 2010). The language development of children on the autism spectrum may include significant language delays (Weismer et al., 2010), and about one-third of children on the autism spectrum are estimated not to acquire functional speech (e.g., Wodka et al., 2013). Pragmatic difficulties are frequently reported in autistic children and include deficits in narration (Baird & Norbury, 2016) and the use of context (Geurts & Embrechts, 2008). Receptive language skills (i.e., the understanding of language) have also been found to be affected, often more than expressive language skills (i.e., the ability to verbalize thoughts, wants, or needs; Hudry et al., 2010). For example, comprehension of figurative speech is often challenging for children on the

autism spectrum (MacKay & Shaw, 2004). Difficulties with early social-communicative skills like joint attention and symbolic play are also frequently reported in the communication development of children on the autism spectrum (Warreyn et al., 2005).

Studies have found a range of literacy skills among both school-aged (McIntyre et al., 2017) and preschool children on the autism spectrum (e.g., Fleury & Lease, 2018; Westerveld et al., 2017). A study with 57 autistic preschoolers (Westerveld et al., 2017) and a group-comparison study with 18 autistic preschoolers and 20 non-autistic preschoolers (Fleury & Lease, 2018) both concluded that autistic preschoolers scored better on code-related literacy skills, particularly in alphabet knowledge than on meaning-related tasks. Literature reviews have highlighted a lack of research on literacy development in young children on the autism spectrum (Rimmer et al., 2022; Westerveld et al., 2016). Available studies generally share the limitation of a lack of participant characteristics (Rimmer et al., 2022). The research on the literacy skills of multilingual children on the autism spectrum is minimal. To my knowledge, the only empirical study to investigate literacy-related skills in multilingual autistic children to date was conducted by Vanegas (2019). Analyzing medical records of 18 monolingual and 13 bilingual students on the autism spectrum Vanegas (2019) found that participants had similar language profiles overall, but monolingual children had higher word reading scores.

### ***Multilingual Autistic Children and Their Families***

Estimates suggest that more than half of the world is bilingual, resulting in millions of children growing up in multilingual contexts (Grosjean, 2010). While there are no prevalence rates on the number of autistic children who grow up multilingual, bilingualism rates in the population have led to estimates that up to one-quarter of autistic children in the U.S. grow up bilingual (Trelles & Castro, 2019). The rate of multilingualism may be even higher for autistic adults: A survey looking into the experiences of autistic adults in the U.K. found that more than one-third of participants self-identified as bilingual, and another third identified as

multilingual (Digard et al., 2020). Despite a rising number of children growing up in bilingual environments due to immigration and other globalization-related factors, research on language acquisition remains focused chiefly on monolingual populations (Byers-Heinlein, 2013). Research on multilingual autistic children is scant to date.

Gilhuber et al. (2023) conducted a systematic review of group-comparison studies that investigated the effects of bilingual exposure on the language development of children on the autism spectrum compared to their peers. The 22 included studies indicate that bilingualism does not negatively affect the language and communication development of autistic children. However, the conclusions drawn from this systematic review may be limited by the frequent exclusion of children with CNN and children exposed to more than two languages. In addition, only one of the 22 analyzed studies (Vanegas, 2013) examined literacy skills, reflecting a lack of research focusing on the literacy skills and development of multilingual autistic children.

Emerging research has started investigating the school experiences of multilingual children on the autism spectrum (Howard et al., 2019a). In a series of semi-structured interviews conducted with 11 seven- to 14-year-old British students, participants' experiences indicated that the educational environment influenced students' perceptions of their multilingualism (Howard et al., 2019a). Students who attended more multilingual educational contexts, commonly in Wales, reflected more positively on their multilingualism (Howard et al., 2019a).

Several parent interviews have revealed that parents of multilingual children on the autism spectrum struggle with several insecurities regarding the language environment they aim to provide for their children. Semi-structured interviews of 16 family members of 14 families with bilingual autistic children revealed that several factors, including professional advice, the perceived importance of the societal majority language, and symptom severity,

influenced families' language practices (Howard et al., 2021a). Another interview study involving 22 Jewish parents discovered that religion plays a significant role in parents' decisions regarding maintaining their heritage language when interacting with their autistic children (Sher et al., 2022).

In general, parents expressed a desire to maintain their heritage language (Yu, 2013; Yu & Hsia, 2019). While some parents reflected positively on bilingualism, naming cultural values and communication with relatives as benefits of maintaining bilingualism (Howard et al., 2021a), other parents had concerns that bilingualism could be a hindrance to their children's development (Hampton et al., 2017; Yu, 2013). Both perceived and experienced barriers influenced parents' decisions regarding maintaining their heritage language (Yu, 2013; Yu & Hsia, 2019). Studies have also indicated that parents whose primary language differs from the societal language face more significant obstacles in accessing services for their autistic children (St. Amant et al., 2018; Fong et al., 2022).

Although available evidence does not suggest that bilingualism has detrimental effects on the language development of children on the autism spectrum (e.g., Gonzalez-Barrero & Nadig, 2017; Hambly & Fombonne, 2012; Hoang et al., 2018), parents of multilingual children with autism are often advised by professionals to only speak one language with their child (Fernandez y Garcia et al., 2012; Kremer-Sadlik, 2005). This advice has been found to adversely affect family interactions, including a possible loss of cultural or religious traditions (Jegatheesan, 2011; Kremer-Sadlik, 2005).

In summary, parents of autistic children growing up in multilingual contexts face unique challenges and insecurities regarding language choices for their children. Interviews with these parents have revealed that they often experience uncertainty and anxiety around maintaining their family's heritage language while ensuring their child's language development is not negatively impacted. In addition, professionals frequently recommend a

monolingual approach, which can compound these concerns. For instance, some parents feel pressured to prioritize the majority language over their heritage language (e.g., Fernandez y Garcia et al., 2012). These findings suggest a need for more support and resources for multilingual families with autistic children.

### ***Home Language and Literacy Environments***

While researchers have long been aware that the home environment influences children's literacy development, early research in this area has primarily focused on the influence of socioeconomic factors on literacy scores (Gillen & Hall, 2013). The hallmark ethnographic studies of Heath (1983) and Taylor (1983) are markings of a shift in early literacy studies, which includes an increased focus on literacy as a social practice (Gillen & Hall, 2013).

**Home Language Environment.** Many factors affect a family's home language policy (King & Fogle, 2006; Showstack & García-Mateus, 2022), meaning the language(s) families speak with each other. Personal factors such as parents' language experiences growing up (Showstack & García-Mateus, 2022) and outside factors such as the sociocultural and sociolinguistic context (Hua & Wei, 2016) influenced parents' decisions regarding the home language environment they aim to provide for their children. Parents' strategies for raising their children bilingually were informed by several sources, including family members and other bilingual families, personal experiences, advice from experts (King & Fogle, 2006), media such as literature (King & Fogle, 2006), and interviews with celebrities raising their children bilingually (Showstack & García-Mateus, 2022). King and Fogle (2006) found that parents' language experiences had a more substantial influence on their decisions regarding the family language policy they employed with their children than other factors.

**Home Literacy Environment.** Similar to the home language environment of multilingual families, several different factors have been found to determine families' home

literacy practices. For example, Raikes et al. (2006) found that daily reading activity patterns are influenced by a range of child and parent characteristics, such as the parent's ethnicity, the level of education attained by the parent, and the child's birth order. In addition, the study revealed that daily reading practices are impacted by parents' verbal ability and the language they speak.

Studies that compared the home literacy environments of autistic children and their non-autistic peers have found both differences and similarities between the groups (Lanter et al., 2012a; Lucas & Norbury, 2018). For example, Lucas and Norbury (2018) compared the home literacy environment of autistic children and their non-autistic peers. They found differences in the duration and frequency of engagement in shared reading. According to parent reports, children on the autism spectrum with a co-occurring language disorder engaged in shared reading activities more frequently than their autistic peers without a co-occurring language disorder and their non-autistic peers (Lucas & Norbury, 2018). In contrast, the other two groups were reported to read independently for a longer time (Lucas & Norbury, 2018). Their findings align with those who connect oral language skills to literacy skills (e.g., Swanson et al., 2008). Another study that analyzed the literacy skills and home literacy practices of 32 autistic children aged four to seven and 32 of their non-autistic peers found that autistic children requested being read to less often and were assumed to enjoy shared reading experiences less than their language-matched non-autistic peers (Lanter et al., 2012a). Further, parents of autistic children have also reported feeling insecure about their abilities to support their children's literacy development (Lanter et al., 2012a; 2012b).

There is a pressing need for more research to understand better bilingual children's language and literacy development (Hammer et al., 2011). A limited number of studies have investigated the characteristics of the home reading environments of multilingual families (e.g., Gonzalez-Barrero et al., 2021) and families of autistic children (e.g., Dynia et al.,

2014). Nonetheless, research concerning the home literacy environments of multilingual autistic children remains unexplored.

### **Study Purpose**

The current study aimed to (a) identify literacy routines and practices of multilingual families of preschool children on the autism spectrum, (b) evaluate parents' values and concerns regarding language and literacy development, and (c) assess which type of literacy-related media and activities multilingual preschool children on the autism spectrum are exposed to at home. The study design incorporated a broad definition of literacy, including traditional print media, oral literacy practices such as storytelling, embodied literacies, and techno-literacy practices. Additionally, this study adopted a sociocultural perspective of literacy, which considers literacy as a social practice (Friedrich et al., 2017). Finally, the current study aimed to answer the following empirical questions:

1. What are home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?
  - a. What routines shape the home literacy experiences of multilingual preschool children on the autism spectrum?
  - b. What media play a role in the home literacy experiences of multilingual preschool children on the autism spectrum?
2. What factors influence home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?
  - a. What factors influence parents' language choices for providing literacy experiences for their children?
  - b. How does parents' language proficiency influence the literacy experiences they provide for their children?

- c. Which sociodemographic, sociolinguistic, and cultural factors influence the home literacy experiences of preschool children on the autism spectrum growing up in a multilingual context?
    - d. How does an autism diagnosis affect the literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?
3. To what degree is multilingualism represented in the home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?
  - a. To what degree are non-dominant languages represented in the home literacy experiences of preschool children on the autism spectrum growing up in a multilingual context?
  - b. To what degree is the family's oral communication language reflected in the children's other home literacy experiences?

### **Definition of Terms**

#### ***Augmentative and Alternative Communication***

Augmentative and alternative communication (AAC) technologies include “spoken and written modes of communication” (American Speech-Language-Hearing Association, n.d., para. 1) aimed to provide both rehabilitation and habilitation services for individuals with complex communication needs (Beukelman & Light, 2020). AAC includes unaided systems, for example, signs, and aided systems, that can be low-technology like picture exchange systems or high-technology computer-based technologies (Beukelman & Light, 2020).



### ***Autism Spectrum Disorder***

Autism Spectrum Disorder is a neurodevelopmental disorder characterized by areas of development in social interaction and communication and "restricted, repetitive patterns of behavior, interests or activities" (American Psychiatric Association, 2013; p. 50).

### ***Intersectionality***

Defined as more than the overlap of multiple identity markers, intersectionality considers the intersection of multiple markers of difference and the role of these intersections in systems of privilege and oppression (Crenshaw, 1989; Collins, 1990; 2000).

### ***Literacy***

Beyond skills for encoding and decoding written language (Marsh, 2005), literacy is considered a multimodal social practice (Larson & Marsh, 2015) of sense-making of the environment. This definition includes activities incorporating traditional print media, oral and enacted literacy practices, and techno-literacies (Flewitt, 2017; Souto-Manning & Dice, 2009; Pahl & Rowsell, 2010). For example, in addition to reading a book, literacy activities reflected in the current study include singing and listening to songs, nursery rhymes, storytelling, acting out a story, a child watching their parent write a grocery list, games that teach vocabulary such as memory, and listening to audiobooks.

### ***Multilingualism***

With a significant variance in proficiency levels, age, and exposure (Surrain & Luk, 2017), multilingualism is generally defined as proficiency in two or more languages (Grosjean, 2013; Petersen et al., 2012). In the context of this paper, multilingualism is synonymously used to include the term bilingualism, encompassing exposure to two or more languages. Bilingual exchanges can include translanguaging, which encompasses switching between multiple languages both within and between modes of communication (García,

2009), and code-switching, the use of two languages within the same sentence or utterance (Wei, 2007).

## **CHAPTER 2**

### **METHODOLOGY**

The current study consists of an international four-phase mixed-method design conducted in the U.S. and Germany, two mostly monolingual countries with a high percentage of multilingual residents (Grosjean, 2013; European Commission, 2012). The current project's four phases were conducted separately but simultaneously in both the U.S. and Germany: (1) an online parent survey; (2) semi-structured follow-up interviews with a subsample of survey participants; (3) video recordings of the home literacy practices of a subsample of interview participants; and (4) video-cue feedback on the video recordings of home literacy practices from the third phase of the study.

#### **Ethical Considerations**

Approval for the current study was granted by the Institutional Review Board (IRB) of the Human Research Protection Program of the Pennsylvania State University. Following the guidelines outlined within the IRB protocol, I obtained informed consent from all participants. All participants were assigned pseudonyms to protect their identities, and pseudonyms were chosen to align with participants' self-reported ethnicity. Audio and video recordings, as well as interview transcripts and data coding sheets, were kept in a password-protected, web-based document storage system.

#### **Positionality of the Principal Investigator**

In the following paragraphs, I reflect on my positionality as the principal investigator as it pertains to the current study. Following the recommendations by Boveda and Annamma (2023), I address the sociocultural, sociohistorical, and onto-epistemic context of the current study.

### *Sociocultural Context*

As a researcher in the field, my position is always political. Thus, I begin with a descriptive account before I move on to a more contextualized understanding of my positionality as it is concerned with race, categorization, gender, and other salient factors. I begin this work identifying as a non-disabled white woman, a native German speaker with a high level of English proficiency, and a licensed special education teacher in the German state of Bavaria. I grew up in a rural community in Bavaria, Germany, and was raised in a predominantly monolingual context as a speaker of the dominant language. However, I grew up speaking a Bavarian dialect at home and in the community, while formal German was expected from all students at school. I acquired my second language English as a foreign language. A German native, I have completed my post-secondary education in Germany, the U.S., and Sweden, all countries that are considered part of the global north.

My teaching experience in Germany, Sweden, Canada, and the U.S., gave way to formal education in the U.S. As a graduate student at an American university, English is currently my dominant language, and I identify as a German-English bilingual speaker.

I share some aspects with my participants in this understanding but with many differences. In each context, I can use dominant languages, English, in particular, being considered a language that carries high transnational linguistic capital (Gerhards, 2014). Furthermore, as a white woman, my international mother tongue is not racialized.

I have taught autistic students, most of whom were monolingual speakers, but some grew up in multilingual contexts. All my teaching experiences occurred in predominantly monolingual societies, but I have taught minority languages in two of the countries I previously worked in. I have observed and conducted special education policies such as IEP meetings in Germany, Canada, and the U.S. In Germany, I have personally faced the challenge of conducting parent-teacher meetings, where I, as the teacher, did not speak the

parent's language, and the parent had limited proficiency in the languages I was able to converse in.

In summary, I both share some of my sociocultural markers with participants of the current study, while I differ in others. Three of the participants hold a Master's degree, which is also currently my highest level of education. I am a bilingual speaker, like all six participants of the current study. I am also an immigrant living in a country other than the one I was born in and that I am a citizen of. Four of the six participants of the current study also reside in another country than the one they were born in. Both my ethnicity and my native language differ from all six participants. I am also not yet a parent. While I am familiar with both countries this study was conducted in, as well as their educational and sociolinguistic context, I gained familiarity with educational and linguistic policies from the perspective of a student, a teacher, and a researcher, not from the perspective of a parent.

### ***Sociohistorical Context***

The current study builds on elements of four professions: Early childhood education, special education, comparative and international education, and linguistics, with an emphasis on multilingualism. Each research community has its own genealogy, critiques, and complex relationships with literacy and language development that need to be acknowledged in relation to the study. The definition of literacy in the previous chapter reflects the positioning of the current study within these complex dynamics.

I was assisted with interpretation and analysis. This began with my advisors, two faculty members with experience in qualitative research as well as special education and early childhood education, respectively. I also collaborated with graduate students with proficiency in both Spanish and English or Turkish and English, who supported me in developing the Spanish and Turkish translations of the survey. Each translation was conducted by two native speakers of Spanish or Turkish who also had excellent proficiency

in English, with one person completing the translations and the other comparing the translation to the English original.

### ***Onto-epistemic Context***

As outlined in the theoretical framework, the current study draws on a broad definition of literacy in an effort to capture and value all forms of literacy activities participants engage in with their children. This study also draws on intersectionality to reflect on the intersecting identities of participants, particularly the intersection of an autism diagnosis and linguistic diversity as markers of difference. I aim to be conscious of the role that ableism and linguistic imperialism play in this context.

This study aims explicitly to disrupt deficit narratives that undervalue literacy practices other than traditional print-media-based activities. I aimed to center parents' perspectives throughout all four phases of the current study. During interviews, I asked questions and provided prompts but made an effort to allow participants to guide the conversation. I only offered my personal perspective when participants specifically asked me a question or when participants reflected on having received professional advice that suggested that bilingual exposure was harmful to their child's language development. In this case, I shared with participants that available research does not indicate any negative effects of bilingualism on the language development of autistic children.

### **Site Selection**

This study aimed to investigate what characterizes the home literacy experiences of children on the autism spectrum who are exposed to multiple languages in their home context but grow up in a primarily monolingual society. I recruited participants from the U.S. and Germany; two countries considered part of the global north with a similar sociolinguistic profile. As the school systems of both countries are significantly different, only parents of children who had yet to enter first grade (the first year of compulsory schooling in each

context) were recruited. Preschool systems and curricula also vary significantly between the U.S. and Germany. However, as this study focuses on literacy experiences in the home, comparing the two sites allows me to compare linguistic environments and draw elemental parallels between the experiences of multilingual parents in each of the countries.

Comparative approaches are highly advantageous for my study. For example, despite multiple differences between the U.S. and Germany in socioeconomic and educational policies, the two countries provide a comparable sociolinguistic context in which languages other than English and German are considered minority languages.

### **Design**

The current study contained four phases and combined qualitative and quantitative methods. I used this approach to gather both direct and indirect reflections about families' home literacy practices. In the first phase, parents of preschool children on the autism spectrum growing up in multilingual contexts were asked to complete an online survey. The questionnaire collected parent responses regarding their home literacy practices, focusing on what type of literacy routines families practice in a typical week and which languages the literacy routines are conducted in.

In the second phase, a sub-sample of survey respondents was recruited to participate in a follow-up interview. The follow-up interview was semi-structured and focused on parents' reasons for providing the literacy practices they engage in with their children and the reasons that influence their choice of language for specific literacy practices.

In the third phase, a sub-sample of interview participants was asked to conduct video recordings of samples of their home literacy activities. The third phase of the study provided direct data in support of the survey and interview responses. Additionally, the video recordings provided the opportunity to observe child preferences for literacy activities and language choices, while the first two phases of the study only included parent accounts. In the

fourth phase, video cues from phase three were used to gather additional feedback from parents regarding their home literacy practices. The video-cues also served as a member-checking process within a second semi-structured interview by capturing the parents' interpretation of the recorded scenes.

### ***Phase I: Online Survey***

The survey was administered through Qualtrics (Qualtrics, n.d.). The survey contained demographic questions as well as questions regarding families' home language and literacy practices. Questions about children's current age and age at diagnosis were formulated to reflect a ratio data level of measurement (Fowler, 2012). All other closed-ended questions reflected either nominal or ordinal levels of measurement (Fowler, 2012). A majority of the questions were formulated as closed-ended questions on two-category, three-category, five-category, six-category, seven-category, eight-category, or nine-category scales (Fowler, 2012). Questions about the families' languages were open-ended questions, allowing short individual responses. Questions related to parent and child language background were adapted from the Language Experience and Proficiency Questionnaire (LEAP-Q; Marian et al., 2007). Questions about home literacy practices were combined and adapted from various surveys (Chow & Cummins, 2003; Gonzalez-Barrero et al., 2021; Hood et al., 2008; Marian et al., 2007; Sénéchal et al., 1998) and amended by additional questions (see Appendix A).

I have conducted cognitive interviews with three multilingual parents who have a child on the autism spectrum as a pretesting measure (Willis & Artino Jr., 2013). Cognitive interviews are defined as a qualitative, evidence-based method that intends to validate the validity of survey questions, i.e., whether questions gather information on the targeted topic (Willis & Artino Jr., 2013). Parents provided feedback on the wording and the content of the questions. Parent suggestions regarding the rewording of questions and format changes were incorporated into the current version of the survey.



To reduce possible language barriers and in an attempt to recruit a more diverse sample of participants, the survey has been translated into Spanish and Turkish, in addition to English and German. Spanish and Turkish are the most common first languages in the U.S. and Germany, after English and German, respectively (Dietrich & Hernandez, 2022; The Federal Government, 2020). The surveys have been translated by speakers with native proficiency in the language of translation and native or near-native proficiency in English. A second native speaker of the language of translation proofread the translation and compared it to the English original. In addition to the survey, recruitment flyers were also translated into Spanish and Turkish.

As the first phase of the study, the aim of the survey was to gather data on all three research questions as well as on seven of the eight follow-up sub-research questions. The purpose of the survey was to collect data aimed at answering the following research questions:

1. What are home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?
  - a. What routines shape the home literacy experiences of multilingual preschool children on the autism spectrum?
  - b. What media play a role in the home literacy experiences of multilingual preschool children on the autism spectrum?
2. What factors influence home-literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?
  - a. What factors influence parents' language choices for providing literacy experiences for their children?
  - b. How does parents' language proficiency influence the literacy experiences they provide for their children?

- c. Which sociodemographic, sociolinguistic, and cultural factors influence the home literacy experiences of preschool children on the autism spectrum growing up in a multilingual context?
3. To what degree is multilingualism represented in the home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?
  - a. To what degree are non-dominant languages represented in the home literacy experiences of preschool children on the autism spectrum growing up in a multilingual context?
  - b. To what degree is the family's oral communication language reflected in the children's other home literacy experiences?

### ***Phase II: Semi-structured Follow-up Interviews***

Within the survey, participants were asked to provide their email addresses if they were willing to be contacted about participation in a follow-up interview. The sub-sample of participants that participated in the study's second phase was primarily recruited through the measure of the study's first phase. Some participants emailed me directly to inquire about the study. In this case, I emailed participants the survey link and offered them to contact me if they had any questions or concerns. Some participants emailed back to indicate they were interested in participating in the follow-up interview. Once participants had expressed an interest in the study's second phase, I emailed the participants the consent form for the interviews. I then scheduled a Zoom meeting to discuss the consent form and any other questions participants may have.

The follow-up interviews were semi-structured and focused on parents' reasons for providing the literacy practices they engaged in with their children and the reasons that influenced what language(s) they offered literacy practices in. The interview guide contained

ten main questions and probes, along with several possible follow-up questions (see Appendix F). Follow-up probes were individually chosen based on participant responses.

Phase two of the current study aimed to target all three main research questions and the eight sub-research questions. Phase two also aimed to extend the findings of phase one by specifically focusing on the one sub-research question that phase one did not address:

Question 2.d. How does an autism diagnosis affect the literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context? As the only research question that is not reflected in the survey, the interview specifically followed up on how the autism diagnosis of their child may have changed the language environment and the literacy activities families provide for their children.

I used interpretative phenomenological analysis (IPA), as outlined by Smith et al. (2022), for the analysis of the parent interviews. IPA is a qualitative approach that supports a phenomenological analysis of participants' sense-making of a specific event in their life (Smith et al., 2022). It is increasingly used in qualitative autism research (Howard et al., 2019b). IPA aims to focus on the individuality of participants' experiences (Demuth & Mey, 2015), specifically on how people reflect on major events in their lives (Smith et al., 2022). Smith et al. (2022) described IPA as idiographic, underscoring the focus on individual experiences. Following the guidelines for IPA, semi-structured interviews were generally conducted in one-on-one settings (Smith et al., 2022). One interview was conducted in a one-on-two setting as both parents wanted to participate in the interview.

I transcribed all interviews directly after each interview to enhance accuracy and continuity. After transcribing the interviews, I analyzed each interview case by case, following the steps outlined for IPA (Smith et al., 2022). The first step contained multiple re-reading of each script supported by exploratory noting (Smith et al., 2022). I formulated experiential statements for each participant by analyzing the transcript and building on the

exploratory notes. I then compiled emerging connections across experiential statements into personal experiential themes for each participant (Smith et al., 2022). Similarities between personal experiential themes then informed the development of group experiential themes (Smith et al., 2022). Group experiential themes were then compiled into superordinate and sub-group experiential themes.

After completing the coding of all interviews, I compiled the codes into a narrative summary, supporting my interpretation with direct quotes from participants (Smith et al., 2022). Participants received a copy of their individual experiential themes along with a transcript of the interview as a process of member-checking and were invited to provide feedback on the experiential themes.

### ***Phase III: Video Recordings***

In the third phase of the study, video recording was used to gather observational data on families' home literacy practices. A sub-sample of interview participants was recruited to record examples of their home literacy routines with their children. Parents were prompted to record their interactions with their children for at least one day. Participatory videos aim to explore the participants' experiences (Jewitt, 2012). One advantage of videos is that they can support exploratory research designs (Jewitt, 2012) such as this one. Videos as a permanent record also allow both researchers and participants to revisit collected data during later analysis (Jewitt, 2012), which provided the foundation for phase four of this study. The current study employed a mobile form of the positioning of the video camera (Wang et al., 2013), allowing participants to choose what to record.

I used a data coding sheet to code each video (see Appendix H). I coded the video recordings for the following variables: (a) type of literacy activity, (b) type of media used, (c) mode, (d) language used during the literacy activity by the parent, (e) language used during

the literacy activity by the child, (f) number of occurrences of translanguaging by the parent, and (g) number of occurrences of translanguaging by the child.

In addition to the coding process, I also transcribed each video. I transcribed both verbal and nonverbal interactions. Nonverbal interactions were marked in parentheses [ ] on the transcript.

The third phase of the study aimed to provide additional qualitative and quantitative data in support of the research questions (1) What are home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?; and (3) To what degree is multilingualism represented in the home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?; as well as all sub-questions of these research questions. In addition to a representation, the recorded videos were also used for further reflection in the fourth phase of the current study.

#### ***Phase IV: Video-Cues***

Another advantage of videos, the fact that participants can reflect on data collected through videos (Jewitt, 2012), was incorporated into the fourth phase of the current study. Building on the video observations of phase three, I chose video-cues and incorporated the cues into a second follow-up interview with the participants. I edited the videos to select video cues that showed literacy interactions that either supported or extended the information the caregivers had provided in the survey and the first interview. During the second video-cue-guided follow-up interview, I played the video-cues for the participants and prompted them to describe the scene in their own words. This was an important step to counter one of the main disadvantages of using video observation in qualitative research: The fact that it is an outside observation and not a direct relation of personal experiences (Wang et al., 2013). After participants described the scene in their own words, I asked potential follow-up questions to learn more about the parents' approach to the literacy activity.

The fourth and last phase of the current study primarily focused on gathering additional data in support of the second research question: What factors influence home-literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context? Using video-cues from the recordings of phase three, parents were prompted to describe the recorded scenes and elaborate on the factors that influenced their choices for the literacy activities they provided for their children in the recorded videos.

### *Enhancing Trustworthiness and Credibility of Interpretations*

Several strategies were used to increase the rigor of the current study and ensure the accuracy of the analysis and interpretation of all interviews and observations. First, I kept a reflexive journal throughout the research process. Second, to ensure continuity and accuracy, all interviews were transcribed directly after each interview. In addition, I undertook different steps of member checking throughout the study. Parents who participated in the interview phase of the study received copies of their transcripts and a list of preliminary codes and were invited to provide corrective feedback on the transcripts. Participants were also sent a copy of all quotes included in the results section and given an opportunity to clarify the context of the quotes or ask that a specific quote note be included in the study.

Lincoln and Guba (1982) recommended that six types of materials be maintained throughout a qualitative study: all forms of raw data, a list of all undertaken activities, documentation of all methodological decisions and all steps of data analysis, a reflexive journal, and a list of professional contacts that influenced the analysis. They recommended five sections that should be included in a reflexive journal: documentation of the researcher's own perceptions as they change throughout the process, all day-to-day procedures, all methodological decisions, a diary that reflects the researchers' thoughts and feelings as they relate to the research process, and a reflection of the development of hypotheses and insights

(Lincoln & Guba, 1982). Accordingly, I kept a reflexive journal that included the five sections recommended by Lincoln and Guba (1982).

The fourth phase of the current study contained an additional aspect of member checking: Video-cues from the video observations in the third phase were incorporated into a follow-up interview where parents were prompted to reflect on the video-cues. This reflected the parents' perspective of the recorded scenes and therefore served as a check of my interpretation as an outside observer.

### **Participants**

Participants were recruited nationwide in the U.S. and Germany using online measures (e.g., social media, online parent groups) and snowball sampling. To reach parents living in rural communities and parents that might not be connected through social media, clinicians working in areas with large multilingual populations were recruited to reach out to potential participants. To participate, parents needed to (a) be the primary caregiver of a child with an ASD diagnosis and (b) have access to the internet. Additional eligibility criteria were: The parent must (a) speak two languages themselves, (b) speak a different language than their spouse, or (c) speak a primary language other than the majority language of the society the family lives in (i.e., English, German). The child needed to (a) have a formal diagnosis or special education eligibility for ASD, (b) be between two and five years old, and (c) have not yet entered first grade.

### ***Phase I: Online Survey***

Eleven participants completed the online survey, with seven respondents from the U.S. and four from Germany. Responses were excluded from the analysis if more than one-fifth of all questions were unanswered ( $n = 2$ ) or if neither parent spoke a second language ( $n = 2$ ). One of the first three survey questions asked whether the child was already in first grade. If the respondent answered yes to this question ( $n = 1$ ), they were directed to the end of

the survey, as this was one of the exclusion criteria of the current study. Six complete responses, five from the U.S. and one from Germany, met the eligibility criteria and counted toward the analysis of the current study.

### ***Phase II: Semi-structured Follow-up Interviews***

Four participants submitted their email addresses in the survey and indicated their willingness to participate in the follow-up interviews. I contacted the four participants via email to explain the process for the interview. Three participants responded to the email and consented to participate in the follow-up interview. Two participants lived in the U.S. with their families, and the third participating family resided in Germany. All interviews were conducted via Zoom and in English. The participating family from Germany preferred to have the interview conducted in English as this was the family's primary language of interaction.

### ***Phase III Video Recordings and Phase IV Video-Cues***

Two of the three participants, who completed the follow-up interviews, agreed to participate in the video recordings. I assigned each participant a password-protected Google Drive folder to upload and store the video recordings. Both participants submitted four videos of their home literacy practices.

One participant also completed the second follow-up interview incorporating video-cues. The video-cue-based follow-up interview was again conducted via Zoom and in English.



## CHAPTER 3

### RESULTS

The aim of the current study was to identify common literacy practices of multilingual families of preschool children on the autism spectrum, assess what factors influence the type of literacy-related media and activities multilingual preschool children on the autism spectrum are exposed to at home, and evaluate the role multilingualism plays in the families' home literacy routines. For this purpose, I conducted a mixed-method study with four phases: an online survey, follow-up interviews, video recordings, and video-cued feedback.

#### **Phase I: Online Survey**

For the first phase, a questionnaire was administered through Qualtrics. The online survey consisted of three parts: Parent/caregiver demographics and household characteristics, child demographics, and home literacy activities.

#### ***Parent Demographics and Household Characteristics***

A majority of the respondents were parents, with four mothers and one father answering the survey (see Table 1). One respondent identified as the aunt and main caregiver of the child they were answering for. Five participants lived in the U.S., and one in Germany (P1). Only two participants currently resided in the country they were born in (P2, P5).

**Table 1***Participant Demographics*

Participant	Relationship to child	Age	Country of residence	Country of origin	Self-reported ethnicity	Highest level of education	Occupation
Sofia (P1)	Mother	33	Germany	Brazil	Brazilian Caucasian	Bachelor's Degree	Housewife
Paula (P2)	Mother	n/s	United States	United States	Latino	Some high school	n/s
Maya (P3)	Mother	31	United States	India	East Indian	Master's Degree	Engineer
Asim (P4)	Father	46	United States	Sudan	African American	Master's Degree	Engineer
Ada (P5)	Aunt	n/s	United States	United States	African	Bachelor's Degree	Nurse
Tara (P6)	Mother	40	United States	Taiwan	Taiwanese Japanese	Master's Degree	Controller; VP of Finance

All participants reported a first language other than the dominant societal language of the country they currently lived in (see Table 2). Only two participants (P4, P5), one of whom was born in the country they currently lived in (P5), reported the highest level of proficiency (extremely well) for the dominant societal language. Two participants (P3, P6) rated their proficiency in the societal language as very well, while two participants (P1, P2) self-rated their proficiency at slightly well, the second lowest level of proficiency. A majority of participants ( $n = 4$ ) reported speaking three or more languages (see Table 2), yet only one participant reported that more than one language was spoken as their main household language (P5). The household of Ada (P5) is the only one that included the societal language as one of the main household languages.

Half of the participants (P4, P5, P6) reported the societal language as the main language of interaction with their child, with a fourth participant (P3) reporting the societal language as one of the two main languages of interaction they shared with their child. For most participants ( $n = 4$ ), the main household language aligned with the main language of

interaction between parent and child. All participants reported the same language of interaction between the second parent and the child they themselves spoke with their child.

For all participants except one (P5), the main language of interaction with their child aligned with the language they preferred speaking with their child (see Table 2). Ada (P5) reported mainly speaking English with their child but preferred to speak their native language Swahili. Both English and Swahili were reported as the main household languages for this participant.

The societal language was one of, or the only language participants reported conducting literacy-related activities in for all participants. Paula (P2) reported Spanish as the main household language and the primary language of interaction with their child, yet reported conducting storytelling, nursery rhymes, singing songs, and reading books in English. A majority of participants ( $n = 4$ ) reported conducting literacy activities in both the societal language and the primary household language.

**Table 2***Linguistic Demographics of Parents*

Participant	First language(s)	Other languages spoken (self-reported proficiency)	Main household language	Main language(s) of interaction with child	Preferred language of interaction with child	Partners language(s) of interaction with child	Languages of (home) literacy activities
Sofia (P1)	Portuguese	English (extremely well), Spanish (moderately well), German (slightly well)	English	English	English	English	English, German
Paula (P2)	Spanish	English (slightly well)	Spanish	Spanish	Spanish	Spanish	English
Maya (P3)	Telugu	Hindi (moderately well), English (very well)	Telugu	Telugu, English	Telugu	Telugu, English	Telugu, English
Asim (P4)	Arabic	English (extremely well)	Arabic	English	English	English	English
Ada (P5)	Swahili	English (extremely well), Maasai (moderately well)	Swahili, English	English	Swahili	English	English, Swahili
Tara (P6)	Taiwanese	Chinese (very well), Japanese (slightly well), English (very well), Spanish (slightly well)	Taiwanese	English	English	English	English, Taiwanese

A majority of participating households ( $n = 5$ ) reported two parents living in the household (see Table 3). Maya (P3) was the only participant who reported only one child living in their household. Half of the participants (P3, P4, P6) reported a Master's degree as their highest educational degree, two other participants (P1, P5) reported holding a Bachelor's degree, and the remaining participant (P2) reported some high school as their highest level of education.

**Table 3**

*Household Characteristics*

Participant	Number of adults living in household	Number of children living in household	Reported range of household income	Number of children's books in household	Bilingual children's books in household (n)
Sofia (P1)	2	2	€30,001-€50.000	Over 50	Yes (n/s)
Paula (P2)	2	2	\$15,001-\$30,000	n/s	No
Maya (P3)	2	1	More than \$70,001	4	Yes (3)
Asim (P4)	2	3	More than \$70,001	20	No
Ada (P5)	4	2	\$50,001-\$70,000	50	Yes (3)
Tara (P6)	2	3	More than \$70,001	100+	Yes (less than 10)

*Child Demographics*

The children of the caregivers who participated in the current study were aged 4;1 – 5;8 years ( $M = 4;10$  years) at the time of survey completion (see Table 4). The average age when receiving the autism diagnosis was 2;6 years with a range of 2;4 to 3;0 years. Half of the children ( $n = 3$ ) were exposed to the societal language as their first or one of their first languages. All children were exposed to multiple languages before 36 months, meeting the definition for simultaneous bilingual exposure (Paradis et al., 2021). Four of the children were reported to most frequently use the societal language, while one child (P1) most frequently used the home language (English), which, in this case, did not align with the societal language (German).

**Table 4***Child Demographics*

Participant	Age (y;m)	Age at diagnosis (y;m)	Additional diagnoses	First language	Most frequently used language	Other language(s) (environment)	Bilingual exposure	Communi- cation level	Use of AAC device (language)	Use of sign language	Use of pictures
P1	5;2	2;6	Learning disability, sensory processing disorder	English	English	German (preschool; other), Portuguese (home)	SIM	Phrase level	Yes (English)	Yes	Yes
P2	4;11	2;4	n/a	Spanish	n/s	n/s	SIM	n/s	Yes (English, Spanish)	No	No
P3	4;3	2;6	n/a	Telugu, English	English	Telugu (home), English (preschool)	SIM	Single words	No	No	No
P4	5;8	2;10	n/a	Arabic, English	English	English (home; preschool), Arabic (home)	SIM	Phrase level	No	No	No
P5	4;1	3	n/a	Swahili	English	English (home; preschool), Swahili (home)	SIM	Simple sen- tences	No	No	Yes
P6	5;7	2;8	ADHD	English	English	Chinese (home;	SIM	Phrase level	Yes (English)	Yes	Yes

other),  
English  
(preschool),  
Spanish  
(home;  
other)

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*Note.* SIM = simultaneous; ADHD = Attention-deficit/hyperactivity disorder

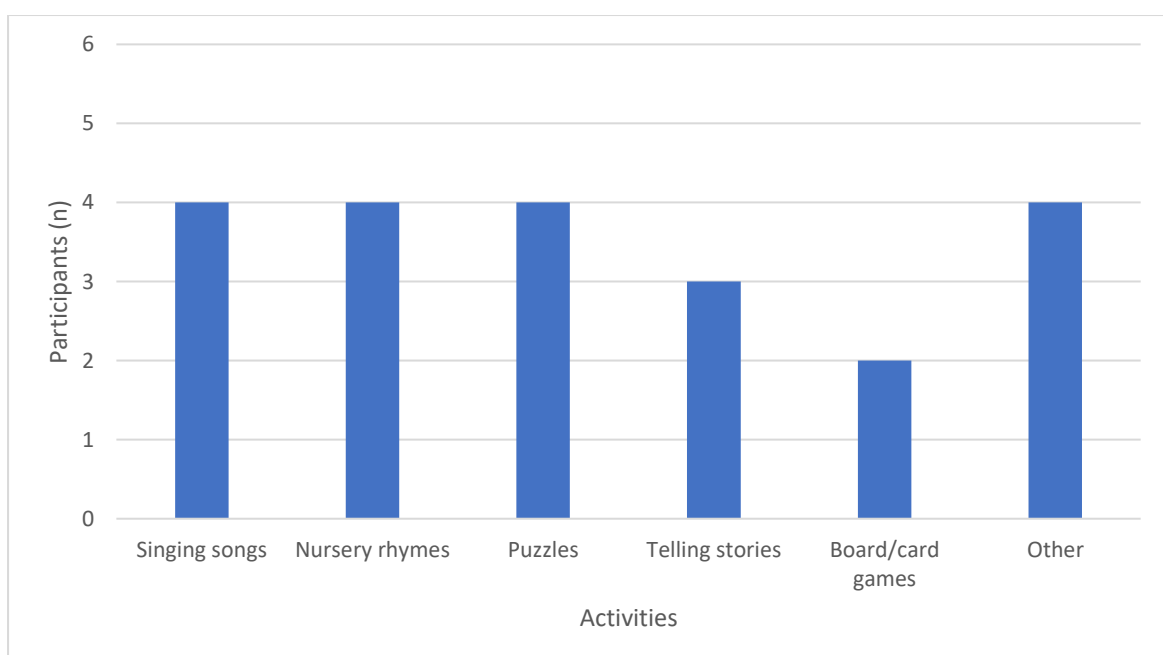
Two parents reported a co-occurring diagnosis for their children (see Table 4). Three participants reported that their children’s current level of communication was at phrase level. One child was reported to use single words, and another used simple sentences. Four children used a form of AAC to communicate, including signs (see Table 4). Out of the three children using AAC devices, one device was set in the home language (P1), not the societal language, one device was set in the societal language (P6), and one device was reportedly bilingual (P2), combining the home and societal language.

### *Home Literacy Activities*

The third part of the survey asked parents to report what activities are part of their regular routines, which languages these activities are conducted in, and who is involved in these activities. The survey focused on seven literacy-related activities: storytelling, singing, nursery rhymes, puzzles, board and card games, reading, and listening to audiobooks. The most commonly reported regular routines included singing songs, nursery rhymes, and doing puzzles (see Figure 1).

**Figure 1**

### *Regular Activities*

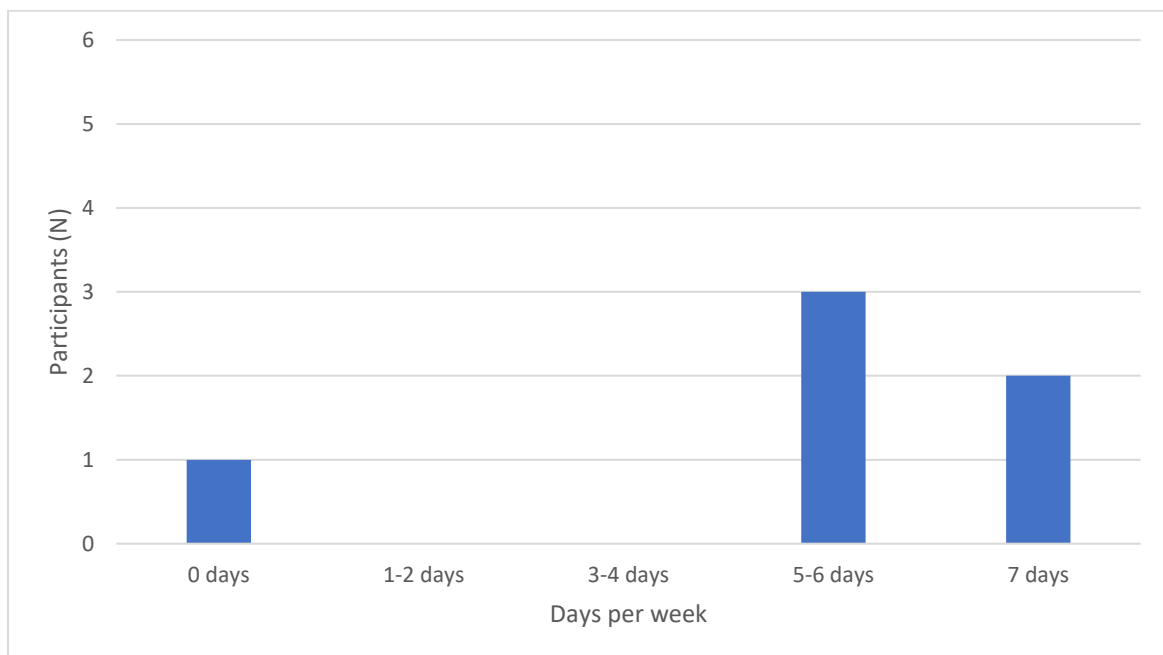


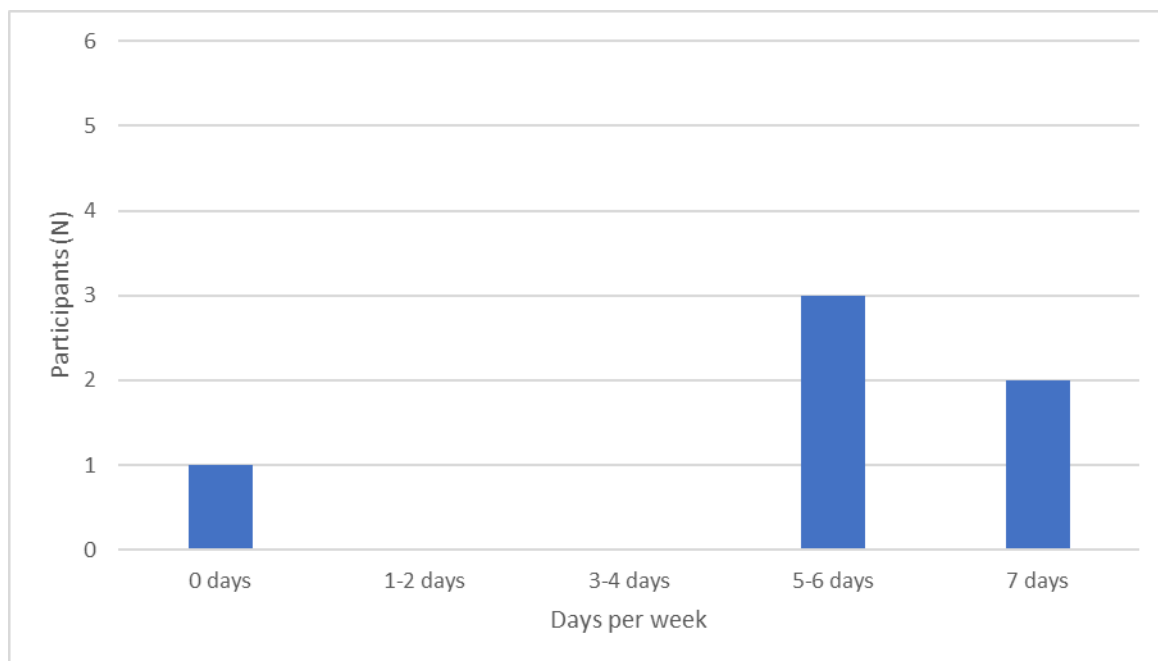
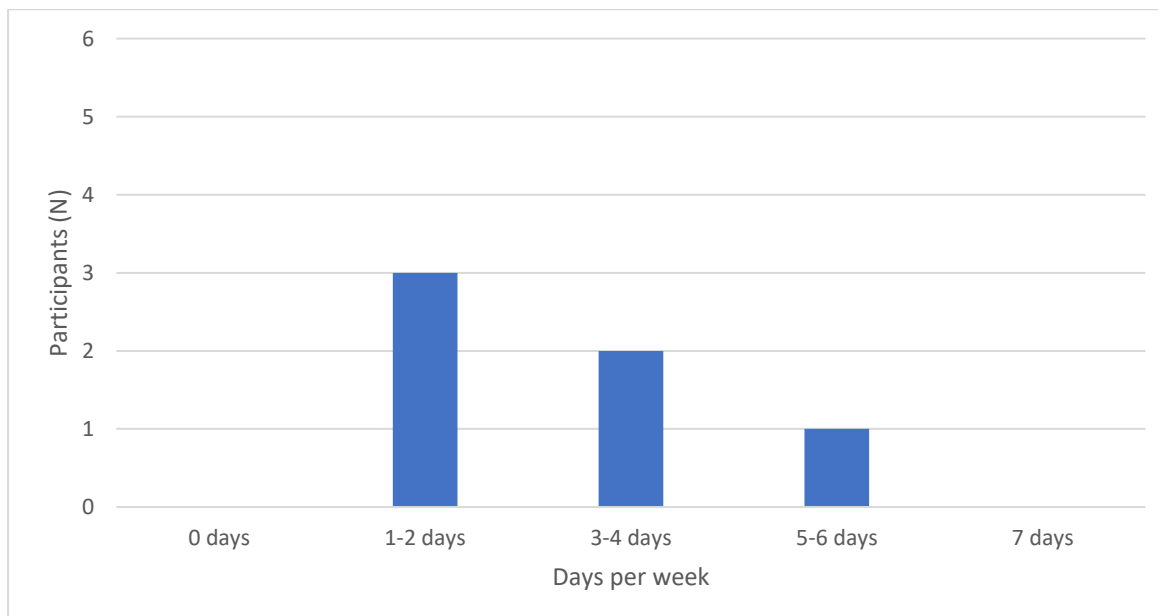


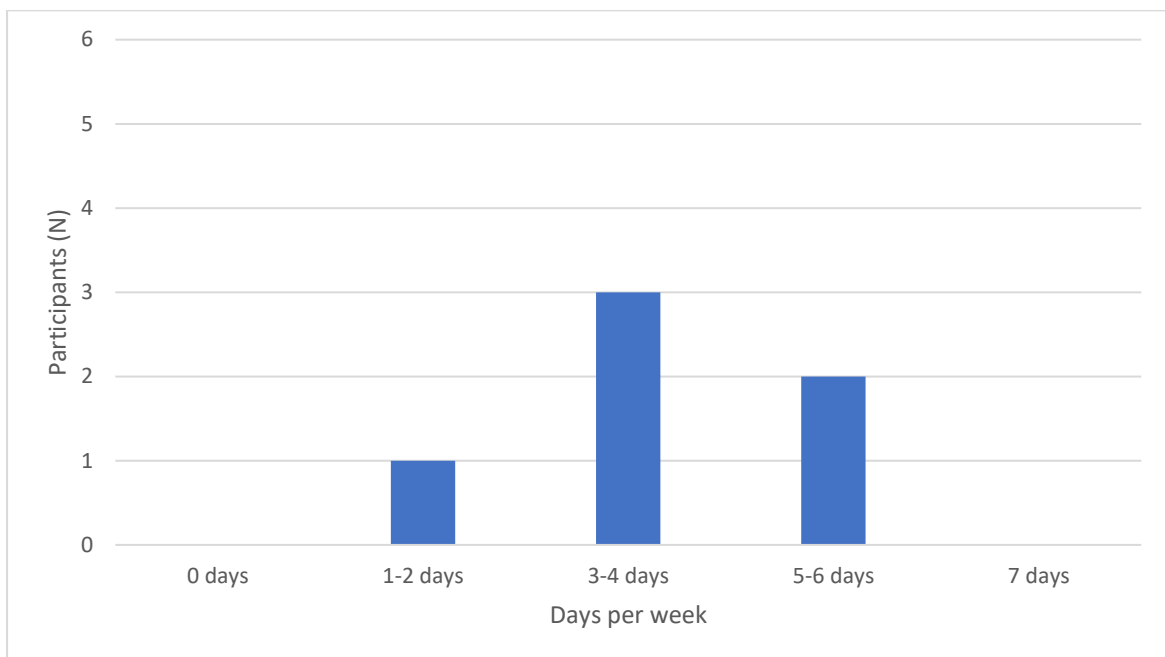
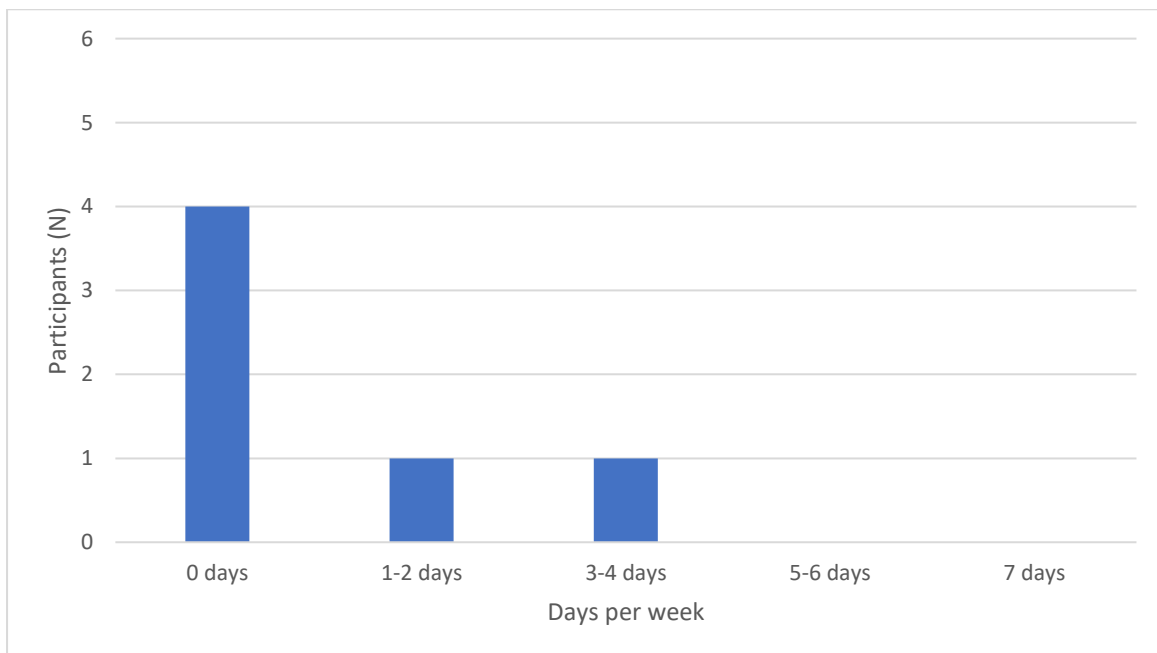
Even though parents reported a number of activities as part of their regular routines, the frequency of the routines varied. Singing (see Figure 2) and nursery rhymes (see Figure 3) were the two most frequently conducted activities. Storytelling (see Figure 4) and reading (see Figure 5) were conducted with moderate frequency. Overall, listening to audiobooks was the least frequently reported routine (see Figure 6), followed by playing board or card games (see Figure 7). Doing puzzles was the activity with the widest variety in frequency ranging from zero days per week to seven days per week (see Figure 8).

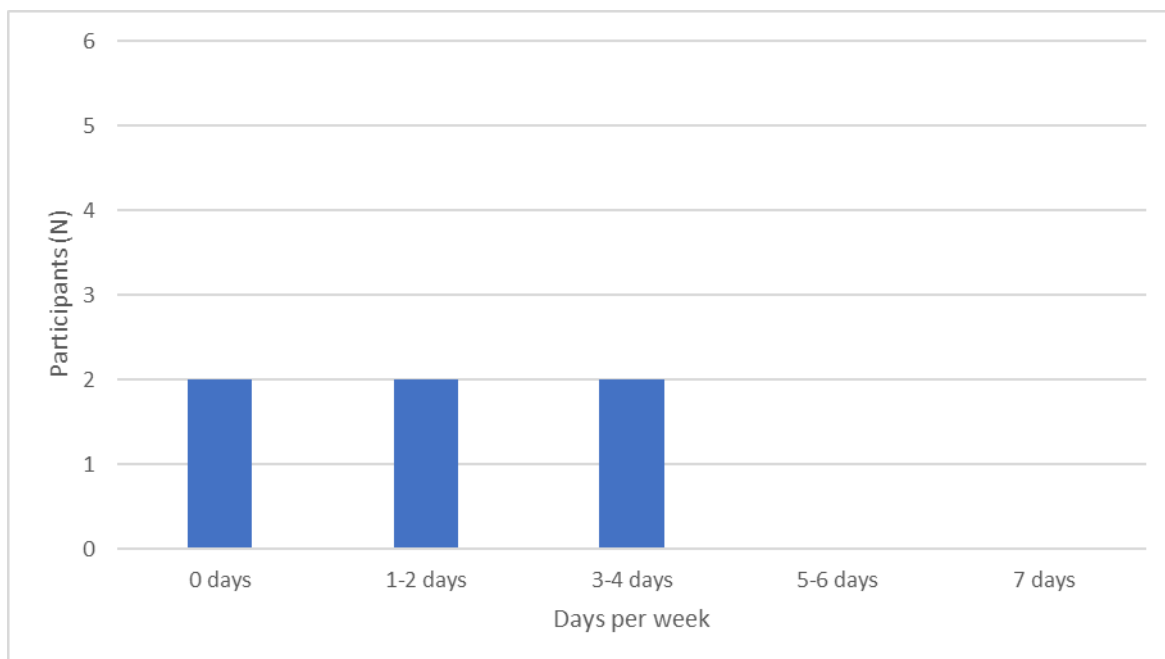
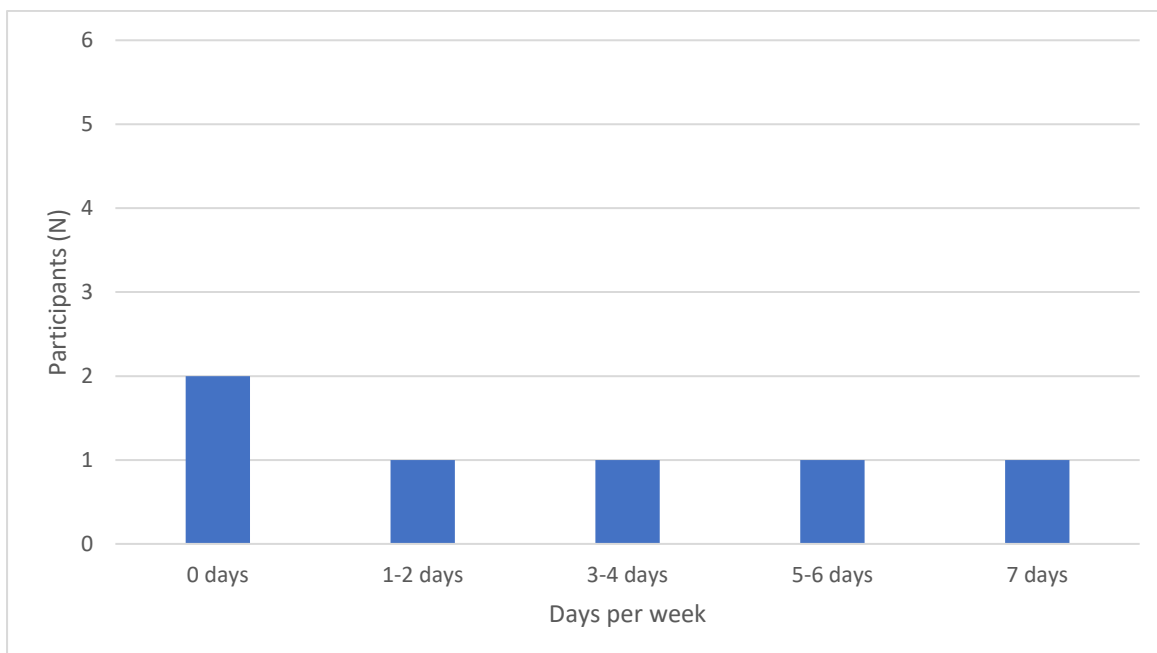
**Figure 2**

*Frequency of Singing*



**Figure 3***Frequency of Nursery Rhymes***Figure 4***Frequency of Storytelling*

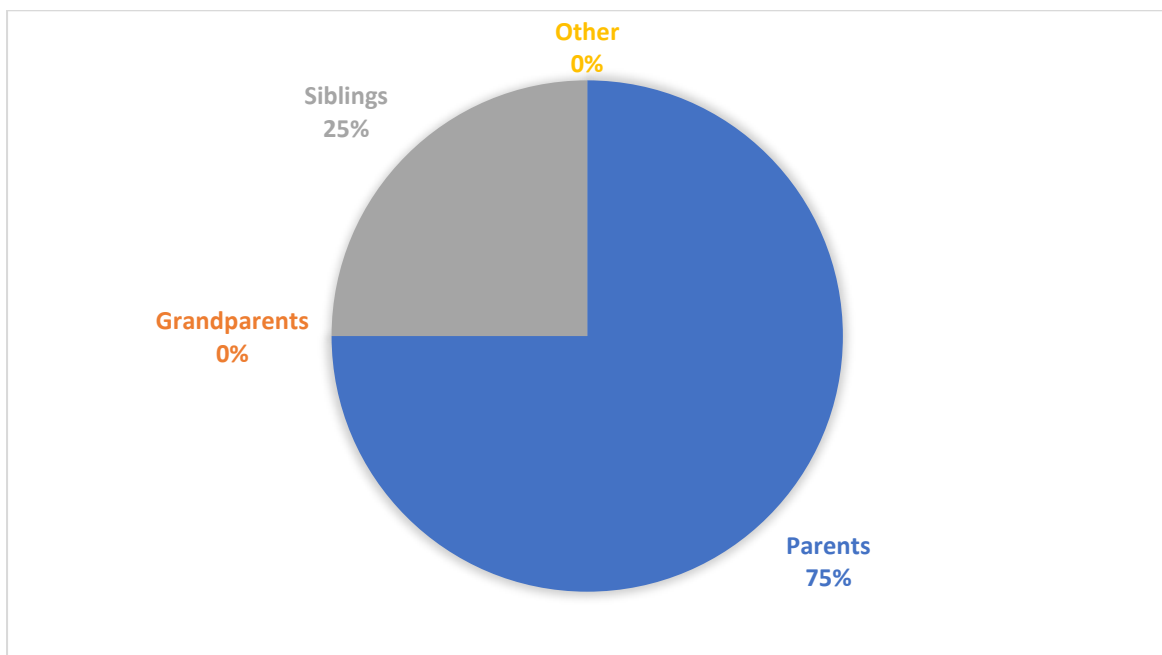
**Figure 5***Frequency of Reading***Figure 6***Frequency of Listening to Audiobooks*

**Figure 7***Frequency of Board/Card Games***Figure 8***Frequency of Puzzles*

Overall, parents most frequently conducted literacy-related activities with their children. Parents were reported to most often interact in reading (see Figure 9), listening to audiobooks (see Figure 10), singing songs (see Figure 11), and nursery rhymes (see Figure 12) with their children. Siblings, when present, also played an important role in literacy-related activities in the home. Siblings were as frequently involved in puzzles (see Figure 13) and board and card games (see Figure 14) as parents. Grandparents were reported to be involved in singing, storytelling, and nursery rhymes. Only one participant reported involvement of other family members in one of the activities (puzzles).

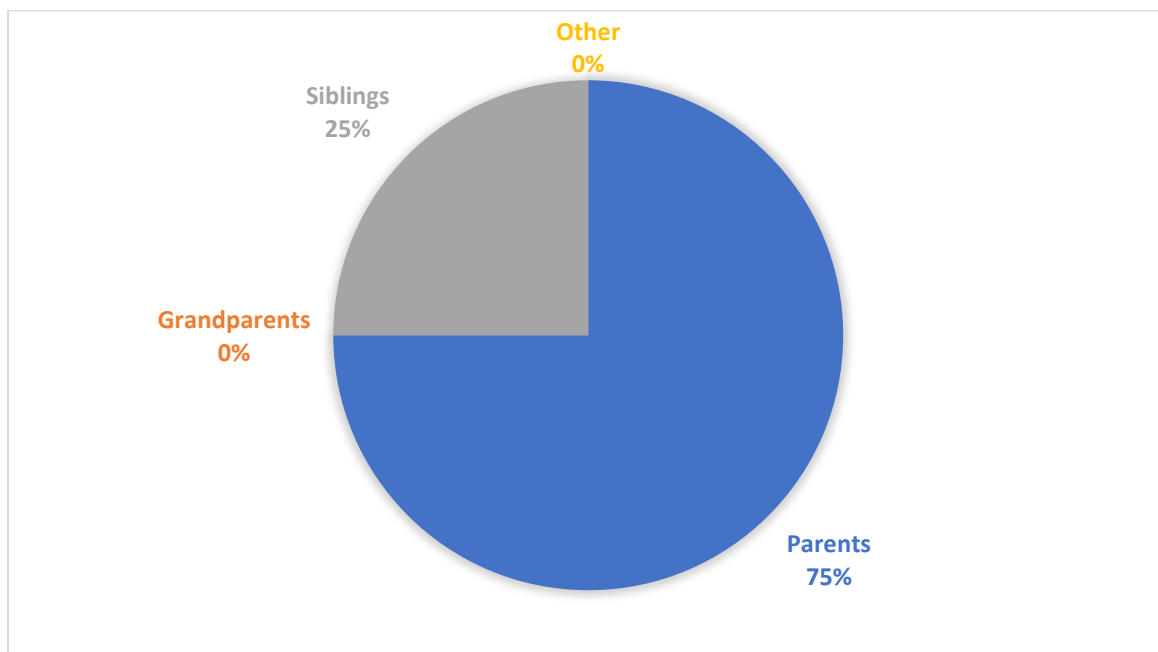
**Figure 9**

*Family Members Involved in Reading*

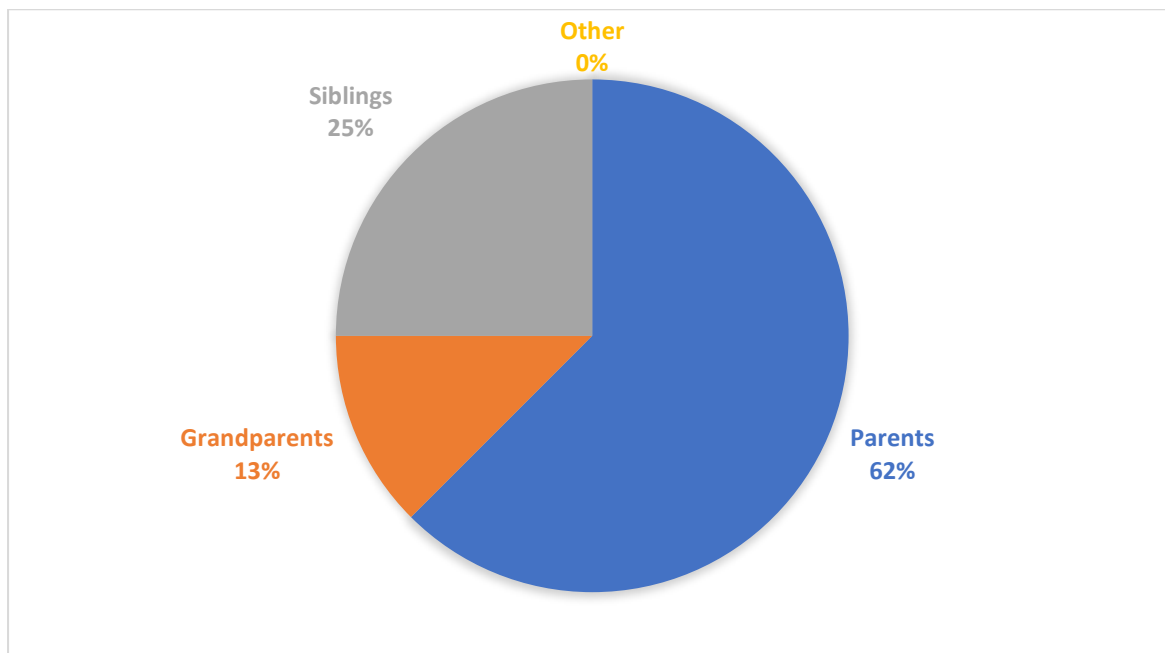


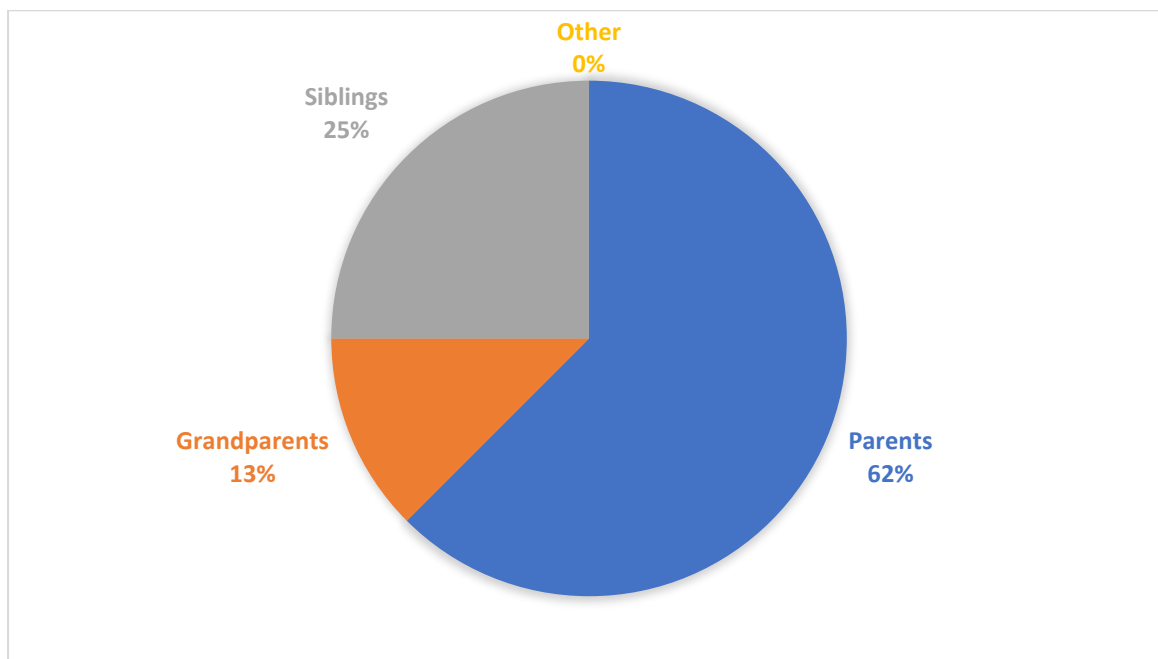
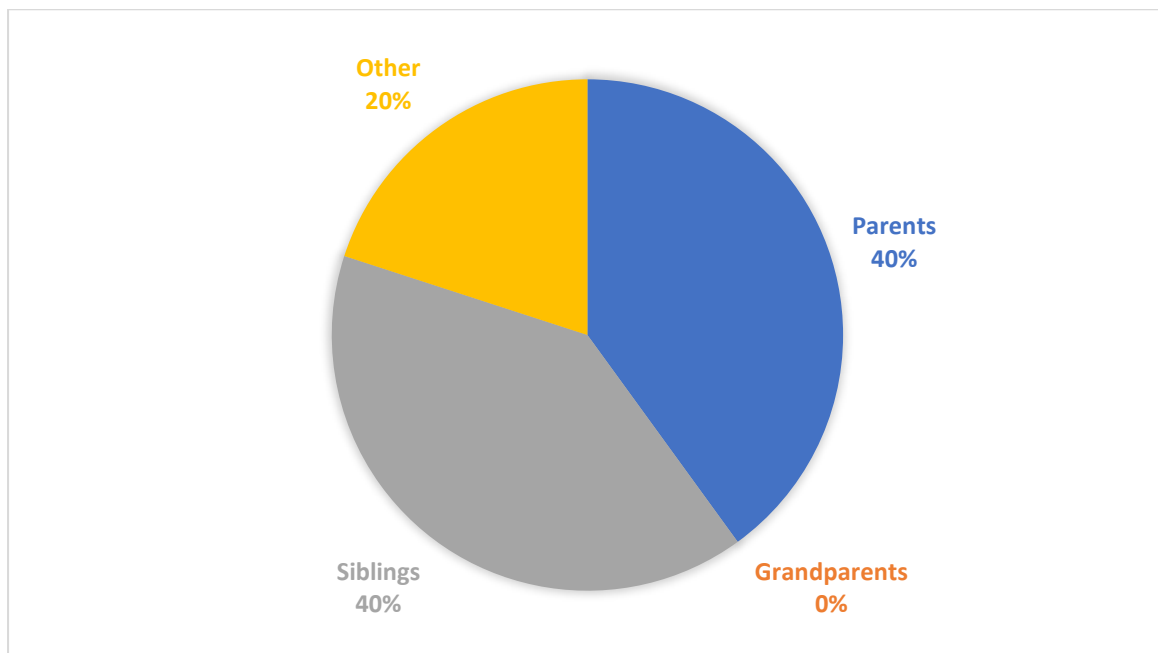
**Figure 10**

*Family Members Involved in Listening to Audiobooks*

**Figure 11**

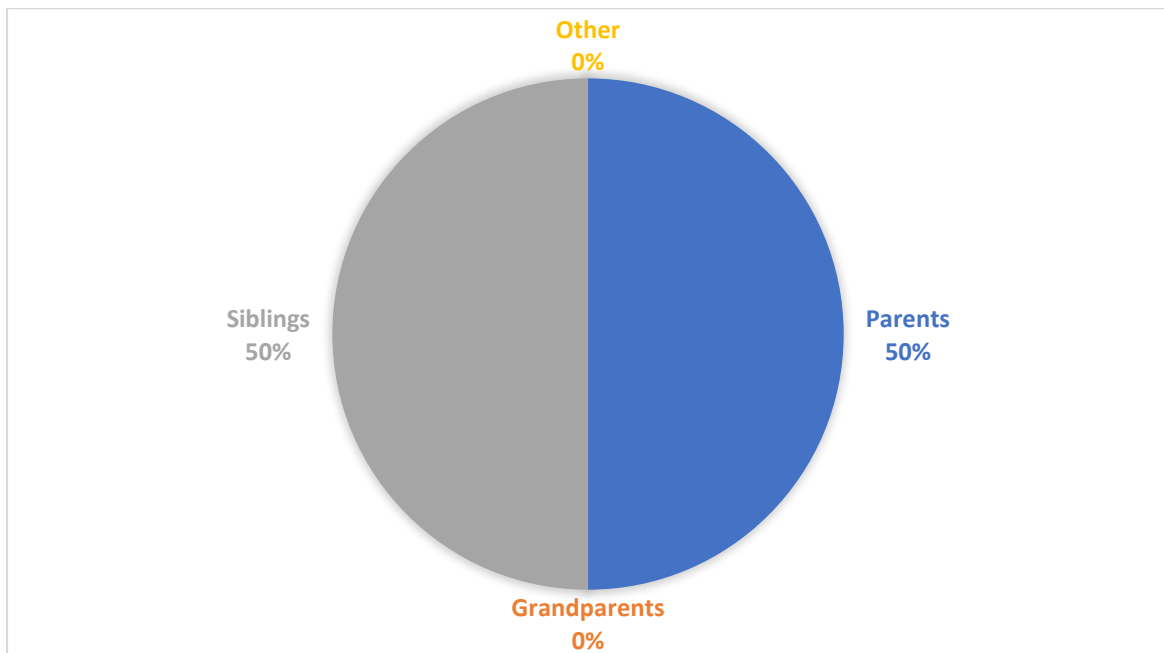
*Family Members Involved in Singing Songs*



**Figure 12***Family Members Involved in Nursery Rhymes***Figure 13***Family Members Involved in Puzzles*

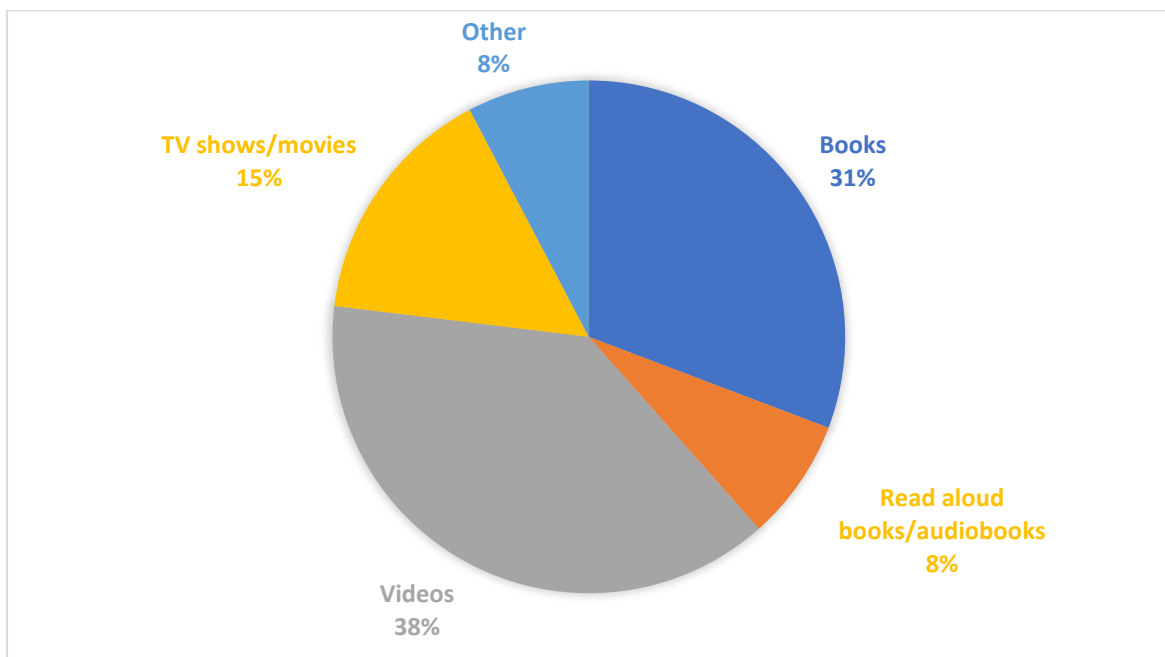
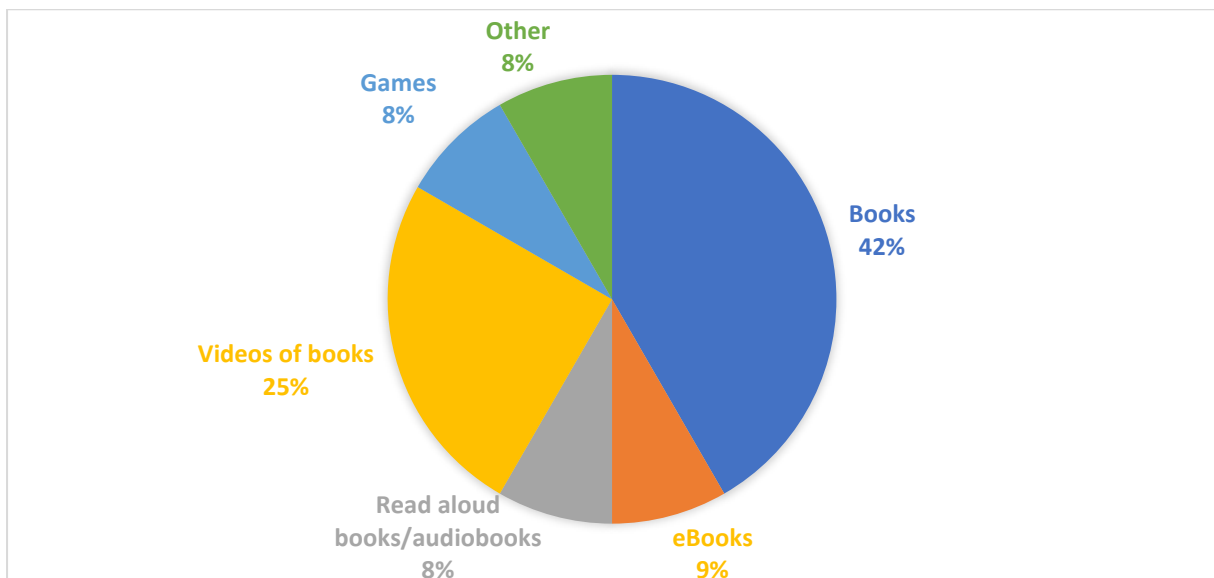
**Figure 14**

*Family Members Involved in Board/Card Games*



Two survey questions asked parents to separately list which media were most frequently involved in their regular routines and which media they most often used in reading with their child. The most frequently used media for all activities were videos, followed by books (see Figure 15). Reading most often involved books as the primary medium (see Figure 16). Videos of books were more commonly used than both eBooks and read-aloud or audiobooks.



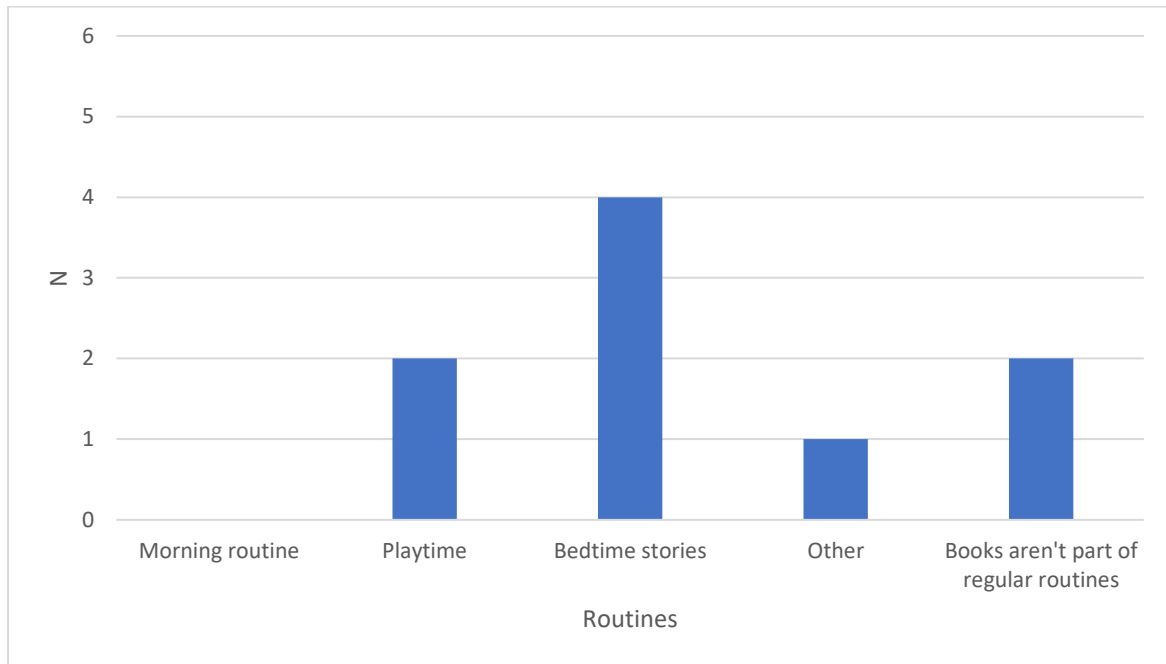
**Figure 15***Frequently Used Media in Home Routines***Figure 16***Frequently Used Media in Reading*

Parents also reported which of their routines with their children incorporated books and what strategies they used during reading. Books were most frequently incorporated into bedtime stories (see Figure 17). Besides reading the text out loud, pointing toward

illustrations was one of the most frequent reading strategies reported by parents (see Figure 18).

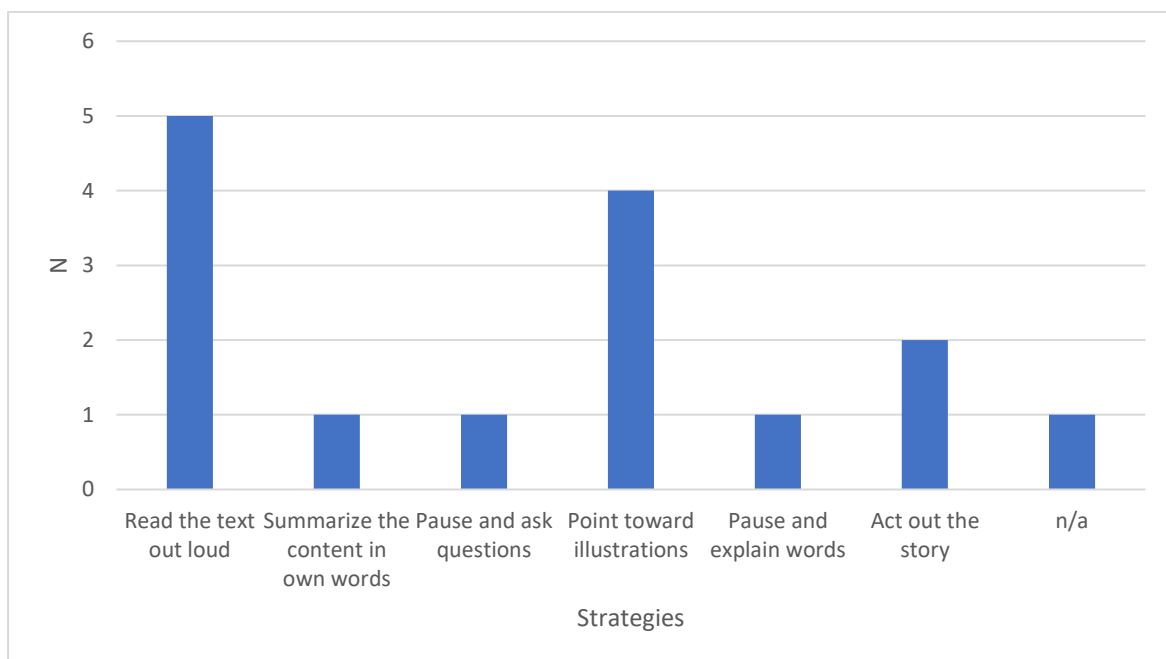
**Figure 17**

*Routines Involving Books*



**Figure 18**

*Strategies Used During Reading*



The last three questions of the survey asked parents to estimate how often their children requested storytelling, being read to, and listening to audiobooks. How often children requested these activities aligned with parents' reports of how frequently they conducted these activities. Activities that were requested often by the child happened at least three to four times during a regular week. On the other hand, activities that children requested never or rarely were activities that families overall reported doing less frequently or never.

In summary, participants reported a number of literacy-related activities, including oral literacy practices such as storytelling and activities including traditional print media like books. While a majority of participants reported books as a media that is part of one or more of their regular routines, two participants also reported that books were not part of their regular routines. Bilingual books were rare in participating households. Four out of six participants reported having bilingual children's books in their household, but all four participants reported less than ten bilingual books (see Table 3). Parents and siblings were most frequently involved in literacy activities.

## **Phase II: Follow-up Interviews**

I used interpretative phenomenological analysis (Smith et al., 2022) to analyze participants' responses and to develop group experiential themes. The analysis of group experiential themes led to the formulation of three superordinate and fourteen sub-group experiential themes (see Table 5). The following superordinate experiential themes emerged from the data: (1) home language and literacy environment; (2) child communication; (3) services and service providers.

**Table 5***Superordinate Experiential Themes and Sub-group Experiential Themes*

<b>Superordinate Experiential Themes</b>	<b>Sub-group Experiential Themes</b>
Home language and literacy environment	<ul style="list-style-type: none"> <li>▪ Language of interaction among family members</li> <li>▪ Factors influencing language choices</li> <li>▪ Child interest as a deciding factor</li> <li>▪ Societal language</li> <li>▪ Hierarchy of languages</li> <li>▪ Consumption of/exposure to multiple languages</li> <li>▪ Media</li> </ul>
Child communication	<ul style="list-style-type: none"> <li>▪ Augmentative and alternative communication</li> <li>▪ Expressive versus receptive language abilities</li> </ul>
Services and service providers	<ul style="list-style-type: none"> <li>▪ Service providers perception of and knowledge about multilingualism</li> <li>▪ Language of services</li> <li>▪ Providing services at home</li> <li>▪ Policies</li> <li>▪ Lack of support for literacy development</li> </ul>

Sofia (P1), Asim (P4), and Tara (P6) participated in the follow-up interviews. Tim, Sofia's husband, also participated in the interview.

***Home Language and Literacy Environment***

Building on the information they provided in the survey, the three families who participated in the follow-up interview provided additional information on their home language and literacy environments. Asim described that while he and his wife preferred to speak their native language Arabic with each other and their older daughters, they had decided to focus primarily on English for interactions with their son: "We barely use a few Arabic words but mainly English with him." He also said that his daughters prefer to speak English with each other: "They speak English whenever they have the chance. They speak English with each other, but we try at home to speak Arabic."

Tara listed Taiwanese as her family's main household language and English as the language she primarily interacted in with her son. In the interview, Tara described a highly multilingual home environment. Having grown up in multilingual households themselves, Tara reported that both she and her husband valued multilingualism. Tara grew up in a Taiwanese, Japanese, and Chinese multilingual household until she was eleven and reported that her husband's parents spoke French and Spanish as their native languages. Tara grew up outside of the U.S, her husband in New York. Tara and her husband had several au-pairs living with them before the Covid pandemic. Their previous au-pairs spoke some of the languages of both parents as well as languages not spoken by any family member, like Turkish. Tara said that Taiwanese was currently the dominant language of their household because she and her husband felt that the societal language was easily available outside the home, and Spanish is a common foreign language in school: "My husband always be firm that we would speak mom's language first. You always have opportunity to speak English in school, anyway."

Sofia and Tim explained that they had previously planned to provide a bilingual home environment for their two children. Sofia was going to speak her native language, Portuguese, and Tim, a German native, was going to speak English with the children. Tim stated that they had planned for the societal environment to provide language input in German while they focused on the other two family languages at home: "Well, for- for German, it's like, it's- they have it in school. And with their friends, then they would be exposed that way. So, we're not really worried about having to push that." Aligning with the information Sofia provided in the survey, Tim described English as the primary language of interaction in their household.

Primarily in English. He has been speaking more German, that he learned in the kindergarten and from his Frühförderung [early intervention] therapy, and Oma

[grandmother] is here as well. So, it would be like, he says one or two words in German, and then we would continue the conversation in German to see what else, and see how much he wants to say, and then you know, if he's lost for words, he'll jump back to English.

Sofia and Tim made two changes to their home language environment after noticing delays in their son's language development. Before switching to their current home language environment, with both parents speaking English with their children, Sofia and Tim had planned for only Sofia to speak English at home and for Tim to speak German. Tim explained the reason why he switched to speaking English at home as well:

The biggest argument, or the biggest reason why I switched to myself also speaking English with them, was that you know, D.[son] was able to speak one or two words in- in- in English, and then I was like, wow, okay, I wanna be part of the conversation. I don't want to, you know, disregard it, and speak a different word in German. I wanted to interact with him. And then it was just like too many times that happened. I- I wanted to-, so I switched to English as well, and then I was part of it as well.

Both Sofia and Asam reported changes to the home language environment after their sons were diagnosed with autism. Tim described that Sofia and him realizing that their children were having difficulty was the reason they made the initial changes to their home language environment, first reducing the home language environment from two languages (Portuguese, English) in addition to the societal language (German) to one language (English) in addition to the societal language (German) to only one home language (English). Asim also stated that his son's delay in speech development was the reason why they switched from speaking English and Arabic, their dominant household language, to just English in their interactions with their son: "I think from the minute we realized that he- he was late in speech, this is what we thought. We focused on English with him."

Asim also described that possible changes to the home language environment in the future also depended primarily on his son's language development. While he stated that he and his wife would like for their son to learn Arabic later on, their primary concern at this point was his learning to communicate in the societal language:

For now we- we would like to focus on English. We want him- so he's- he currently speaks two or three- maximum of two or three- a maximum of three-word sentences. And this is in English. So, yeah, while a dream would be for him, or actually- and it's like we would like him to- to- to learn Arabic at one point. But we, for now we want him to- to be able to comfortably speak English. (Asim)

Another factor that parents reported as influential on their choices for the home language environment they provided for their children was their own language proficiency. Sofia described that she primarily spoke English with their children and listed her own proficiency in German as a primary reason for this choice: "My German isn't very good. My daughter probably can teach me better. I- I usually leave it for Oma and Papa, they do the reading in German."

In addition to the child's speech development and the parent's own language proficiency, child interest influenced parents' language choices for interactions. Sofia, who first said that she only speaks English with her children, amended that if her children request it, she will switch to German, even though she prefers for her husband and mother-in-law, native German speakers, to provide input in German: "I- if they want me to read the German book, I'll do so." Sofia's husband, Tim, also described how their son's interest guides whether they carry on the conversation in the societal language, German, or the dominant household language, English:

I think the main focus on it and the way how all of that works is D. [son] sees something on TV that he really likes and is focused on. And then we kind of see

whatever we get, you know, we will reenact one of the episodes with like Lego, or PlayMobile or something, and then that would then be in English as well because he would have seen it in English. And then if we get like, you know if he's really interested in it, then we could get like a book, and then it would be like by chance that it would be in German, and then we would just, you know, he knows the story in English and then most of the times he goes page by page and he- he says a word, and he wants us to repeat it. Then we kind of stick with English, even though it's a German book.

Tara reported that she and her family also followed her child's interest by engaging in other languages, even if those languages were neither of the multiple languages represented in the home. Tara shared how she and her two older children learned an Arabic children's song that their youngest son and brother was playing repeatedly on a music app: "And now me and my other two kids can sing Saudi Arabia children song."

The amount of interaction and the primary caregiver's language were two additional factors that impacted the home language and literacy environment. Sofia discussed that her being at home with the children also factored into English being the dominant language for their home literacy activities: "But I'm the one that more often will read for them." Tara reflected that she is working full-time and therefore doesn't have as much opportunity to speak her native languages with her children: "And then it's difficult to practice consistently at home. Especially, I work full-time and full-time in English."

In addition to other factors that impacted parents' choices for the home language environment, the language itself was also described as a factor. All three families reported English as the primary language of interaction with their children. For Asim and Tara, English was the societal language of the country they lived in. However, for Tim and Sophia, their dominant language of interaction with each other and their children was not the societal



language. With Portuguese being Sophia's native language and German being Tim's native language and the societal language, English was the language Sophia and Tim spoke with each other. Sofia explained their reasons for prioritizing English as the family's primary language of interaction:

I think English is important for us. English is very important. Because then they can communicate to our family in Ireland and my family in Brazil. I'm not too much pressuring them with Portuguese. Maybe they might have interest later in life and want to learn. Maybe once you do some holidays, learn some in Brazil with our family, but I'm not pressuring them to, you know it's not important important that they learn Portuguese. If they don't want to, they might just pass without it. But English is important because that helps them a lot in their life.

Both Asim and Tara reflected that their child consumed multiple languages and languages other than the families' home languages through media, particularly YouTube. Tara explained that her son exposes himself to additional languages besides the family's languages by changing the language setting on YouTube by himself: "He know how to change it, and then he would pick it- you know in YouTube language setting, and then you have drop down, and then you can select the language. He always go there." Asim also reflected that his son listens to songs in different languages:

Yeah, he always or continuously browses through different songs. So, sometimes he would you- most of them are in English, but sometimes he would bump by songs in other languages, and he would treat them the same way he's treating the English songs so- and there are a few songs like one of his favorite ones, is- is the Jungle Book, one of the songs of the Jungle Book, and this one on YouTube has- has a long video where it is the same segments are sung in- in more than I- I didn't count them, but definitely more than ten languages, so he would listen to all of them.

Parents listed both traditional print media like books and new media like tablets and apps as part of their children's literacy activities. For example, Tara described one app as being part of her son's daily routine: "And then he will watch his tablet. He like to watch YouTube kids." In addition, Tara also said that they have "a whole set of Chinese books." Asam also listed YouTube as part of his son's daily routine: "I mean, immediately he asks for the phone for YouTube to play his favorite stuff, songs. He like mainly Baby Shark and Peppa Pig and a few other nursery rhymes." Sofia described them having books in both English and German available for their children: "So, usually I read English books, and we also have audiobooks in English, but they also have the material in German, which my mother-in-law she loves reading for them, which- occasionally when she has time."

### ***Child Communication***

All three interview participants reflected on delays in their children's language development. Tara described how health concerns had impeded her son's speech development and reflected that signs and pictures were his primary mode of communication:

So, then he on trach ventilator, oxygen for another two years. So, by the time of trach reconstruction surgery, he already turned three years so and start learning to talk. And that's why he his nonverbal. Then, when go to the early intervention in [state family previously lived in], they try to - at that time we live in [state family previously lived in] - they try vocalization and then the picture sign. You know, say the picture, for example, of the pacifier. He will show you the picture of the pacifier means he want pacifier.

Like Tara, Sofia and Tim described the AAC system they were using as being in English only. Sofia reflected positively on the impact Picture Exchange Communication System (PECS) had on their interactions with their son and his communication: "But using PECS really helped to us, especially with what the training and everything else."

In addition to expressive language abilities, parents also critically reflected on their children's receptive understanding of languages. When describing that his son liked to listen to songs in different and multiple languages, Asim stated that he was unsure whether his son was discerning between different languages or just focusing on the melody: "I don't know whether he shows interest or not, but he is not- maybe another way to look at it, is he- maybe he- he doesn't realize that this is a different language, maybe." Sofia also discussed that her children had some exposure to her native language Portuguese, but she did not believe that they understood a lot of it: "They listen to a lot of music on TV that might be in Portuguese. And there is one or two cartoons that they like watching in my language. But they, they don't actually understand much of it."

### ***Services and Service Providers***

Participants described the advice they had received from service providers regarding the home language environment they provided for their children. Tim described how he and Sofia sought out practitioners' advice on making adjustments to their home language environment after their son received his autism diagnosis:

Once we knew that D.[son] would or is having problems expressing himself, and then, because before anything we- we had planned to, that Sofia speaks Portuguese, I speak German or rather English, and then, we got the diagnosis. Or like- start the whole process of diagnosis. And then from- from like- the doctor had had their opinion on what we should do. And then we went to like the SPZ [special education services center], where he got diagnosed, and then they were saying like, well, usually it's like this and then, because we were asking like, should I speak German only, and then Sofia only English, and then we're thinking like, okay, that seems like a good idea. He's having difficulties, let's try and help them a bit.

Sofia followed up on her husband's reflection by stating that they were told that multilingualism might contribute to their son's delay in language development: "They were saying that kids that learn more than one language take longer to talk." Tara and her husband, who were both very supportive of multilingualism and believed multilingualism had its benefits, also had a professional tell them that multilingualism might impede their son's language development. "I always think international language actually help development. And then, until the lady told me it's opposite." Tara also said that the same service provider had criticized her accent in English and told her it could negatively affect her son's language development. Tara reflected on how hurtful this comment was to both her and her husband: "My husband was really upset, and he said to her, I say- he say, everyone has accent." While she stated that she felt herself be quieter for a while after this interaction, Tara stated that she has moved past the hurtful experience: "It's fine. I'm over it. I don't take her advice."

Asim stated that both he and his wife preferred for the services and intervention for their son to be in the societal language, English. Tim also discussed that he preferred for his son to receive interventions in the societal language, as he considered therapy to be one of his son's main sources of German:

It's in- in the sense of them speaking like at a meeting, or from kindergarten, parent-teacher meetings having those in English would really help Sofia. I mean, I have been going to them, I make notes, and then we go over the notes. I translate stuff and re-explain it, but for D.[son] to have that in English, I think it would just, I think, kindergarten- kindergarten, and Frühförderung [early intervention], are like his sources of German, and I'm happy the more than merrier because then he will see it in more places, he spends most of his time around us. That's any time that he has speaking German or hearing German, will help him better and faster, to learn.

While Tim and Sofia considered therapy to be an important source of German for their son, they also reflected challenges of the services being provided only in German, which Sofia only reported limited proficiency of. This also affected Sofia's efforts of implementing recommendations and early intervention strategies at home:

Yes, it would be easier. One thing that I was going to say is the speech therapist, they are trying to use the sound of letters with him, but the information that they give me is all how it's applied in German, and then I need to do a big research of what method they use, and I- I think the name is phonics method in English, and then to find it, to learn it and then teach him in English, and that takes me a lot of time, a lot of- it is stressful.

Tim followed up by saying that having the materials available in both German and English would be helpful to them. He reflected that it would allow them to communicate the strategies that they are implementing at home to service providers: "If we had it in both languages, we could apply the English and give copies of the German to the other people, so that know to let them know what we're doing."

Reflections of services and policies were mixed. Tim discussed that the early intervention center they mostly turned to was a great resource for them:

They've always had our back, and they- you know there are some injustices in in like how state or kindergarten teachers, or something - there is some difficulties there and then. They are always the ones that- like, okay, yeah, that shouldn't be like that. And then they fight for us, and you know applications and all that stuff. So, they have been very close to us, and if we do have specific issues, and those are the ones that we would ask first, and if they don't know what they do put us in the direction where we should go.

Tim's wife, Sofia, reflected that despite the support the center provided, there were also limitations to their expertise. In addition, she considered the individuality of autism symptomatology as a reason why services providers often are not able to recommend one straightforward strategy or intervention:

Yeah, most of the time, but there are some stuff that they are not able to help because, ahm, even though they deal with the kids like D.[son], a lot, they deal with different types of disabilities. And it's not only autistic kids. And they might not know everything, they might not be able to help with a lot of things. And then sometimes we ask the Autkom [autism support center] for help, but they also are not able to help us with specific things. They can say only, listen, you could do this, or you could do that, and there's also this option. And then we have to try it out to see.

All three participants reported that their child received speech-language therapy. Both Asim and Tara reported Applied Behavior Analysis (ABA) as an important part of their child's daily routine, with both their sons receiving services Monday through Friday. Tara reported high dissatisfaction with the Individual Education Plan (IEP) writing of her son's current school: "It's the first time I see the IEP writing so generic." Tara stated that she has "seen different speech therapy write-ups" and found the write-ups by previous service providers to be more detailed. In this context, Tara also discussed differences between the services provided in different states as her family had recently moved from a neighboring state to Pennsylvania and reflected that the state they previously lived in "has a completely totally different system."

Tara was the only participant who discussed differences between public and private schools and said she would prefer to send her child to a different school: "I want to decide where to send my kid." However, she reflected that some services were only available in public school settings.

None of the participants had received prior guidance on supporting their child's literacy development. Sofia described the efforts she and her husband took to gather more information themselves:

Our strategies are from searching, asking other parents, asking the professionals that are with us, and his doctor, but never an actual guidance into that. They usually tell us to do what D. [son] has more interest in, and not really a guided experience or a guided way of doing things.

### **Phase III: Video Recordings**

Sofia and Tara agreed to participate in the video recordings. The media represented in the videos they submitted included puzzles, tablets with apps like YouTube kids, and children's TV shows like Peppa Pig.

The videotaped interactions submitted by Tara included Tara, her husband, their son Neil, and the nurse, who supports the family during the day. The interactions reflected in the videos were exclusively in English, the language the family reported primarily speaking with their son Neil, not Taiwanese, the family's reported dominant household language. There were no instances of code-switching observed during the video recordings. Three of the recorded videos showed Neil watching videos on YouTube kids that he himself chose. A majority of the songs were in English, but some videos were in another language.

The first video shows Neil listening to an alphabet song in Tamil. This is followed by an alphabet song in Italian that Neil skips before the sound sets in. Another video shows Neil listening to an English alphabet song, where he keeps rewinding the last few letters of the alphabet.

Apart from the alphabet songs, Neil spent a majority of his time listening to children's songs and nursery rhymes. Below is a coded scene from a video recording showing an interaction between Neil and his mother, Tara:

[child skips back to an earlier part of the song, starts dancing again]

Mom [wags her finger playfully, singing a line from the song]: “No more monkey.”

[child repeats wagging finger motion]

[child holds up one finger – line from the song: “one little monkey”]

[child holds up two fingers]

[child holds hand up to his ear like a phone – line from song: “mama called the doctor”]

[child wags his finger – line from the song: “and the doctor said: no more monkeys jumping on the bed]

Another video shows an interaction during snack time. Both Tara and a nurse, who supports Neil at school and at home, were in the dining room. Neil was seated at the dining room table, the iPad that holds his AAC app propped up in front of him, playing YouTube kids.

[child reaches out with one hand]

Mom: What do you want?

Nurse: Are you done?

Mom: Neil, are you done?

[nurse walks over, pulls wet wipe out of package in the middle of the table]

Mom: Do you want wipey? Neil, you need to ask for it. What do you want?

Nurse [laughs, walks over to child, pulls up AAC app]: Tell me what you want.

[child grabs wet wipe]

Mom: Ah, too quick.

[child wipes his mouth and holds empty cup in other hand]

Mom: You want more?

Nurse: You need to-



Child [via AAC app]: tissue

Mom: tissue

[child navigates iPad back to music app]

Mom: Do you want more? [signs more] Neil, more?

Nurse: Can you tell me more on there or show me more? If you want more. Here, go, there- [navigates iPad back to AAC app, away from music] Can you tell me what you want?

[child navigates back to music]

Nurse: You're not showing me what you want.

Mom. Are you done? All done [signs done].

[child signs more]

Mom: You want more [signs more].

Nurse: More. You are a hungry boy.

[mom laughs]

[child dances to English children's song that is still playing in the background]

[nurse refills child's snack, child starts eating snack]

[nurse walks back to the other end of the table]

[child rewinds song]

Overall, the videos submitted by Tara showed multimodal language and literacy practices. The most frequent modes of literacy activities were auditory, visual, and written. Videos were the preferred media reflected in the video recordings. While the family's interaction was exclusively in English, the literacy activities reflected different languages that Neil chose himself.

All four videos submitted by Sofia showed the family's morning routine, with Sofia being home with her two children, Damian and his sister Maya. The family's interaction was

predominantly in English, with only a few words in German. As was reflected in the interview, the family used the German terms for dad (“Papa”) and grandmother (“Oma”), while Sofia used the Portuguese word “mamãe” for mom to refer to herself.

One scene from the videos showed the family watching an episode of the children’s show Peppa Pig. Sofia used the video about Peppa being sick to try to convince her son Damian to take his medicine.

[Damian is lying on the couch and his sister is leaning against the couch, facing the TV where a children’s show is playing in English]

[the characters on the TV show talk about someone being sick and needing to take medicine]

[mother sits down next to child on the couch and hands him a drink]

Mom [sits down next to the child and points to the TV]: Look, she is there. She is getting better now that she took the medicine.

[child looks at the TV]

Mom: And she drank all her juice. She’s feeling better now.

[Mom, Damian, and his sister continue watching the TV show]

The videos that Sofia submitted showed all interactions between her and her two children to be in English, including the media she incorporated, like a children’s TV show and her son’s PECS. This aligned with the information Sofia provided in the survey and reflected in the interview.

#### **Phase IV: Video-cues**

Only Tara has completed the second follow-up interview, incorporating video-cues. I showed Tara five clips from the four videos she submitted. One of the video-cues showed Neil using signs to communicate his desire for a refill of his snack. Tara reflected that they built on her son’s interest in music to teach him signs to communicate: “He learns these from

music. We have a DVD teaches sign, doesn't get it, but we play the song that teaches sign, he get it. He love music." Again, following her son's interest, Tara also explained how she subscribed to a YouTube account that created one of Neil's favorite songs: "And then I subscribe to whole- whole collection."

Tara also discussed additional routines and interactions that were related to the scenes in the clips. For example, she recalled how her son liked to re-enact scenes from movies that they had previously watched and how the family members engaged in role-play based on scenes from the movie:

And then he like to be Anna. I like to be Elsa. So, when I'm dancing, let it go, he would do it, and then he like to be Anna, knock on the door and then sit down. That was a good one, too. And then there was another movie, Dragon Hunter riding the horse. He would go to climb on his brother and want to ride on a horse.

Tara also explained that whenever her son was watching something on YouTube, he had subtitles on, which was not visible on the recorded videos: "Every single song has a subtitle." She reflected that her son had started to spell out words and sentences on his AAC device and considered whether this might be attributed to him watching all the videos with subtitles:

Yeah, I set that up, and the teachers say he know a lot of things. No icon because the talker is icon, right? The teachers say he would- he would push the icon aside and bring up the- the keyboard screen. He'd spell the word. And then they asked me say do we teach him those words. I said no could be he watched all the song in subtitle. Then he noticed, and then he would rewind and just watch the word. And then the other day he spell- he spelled: I want swim trunk. I want go outside swimming, he literally typing sentence. And then the other day he told the teacher in the school: I want tablet. Spell whole sentence instead of touch the icon.

Additionally, Tara stated that they had started to have the subtitles on whenever they would watch a movie as well: “My- my husband, my other kids hate it because in the living room TV, I put a subtitle too. So, he was sitting in front of TV and follows- you see his finger and- and point at word.” Tara considered this a useful strategy for Neil’s literacy development. “And also, he already behind in language. That’s another way he’s learning to write the sentence. Spelling, too.” Overall, Tara reflected an additional layer of multimodality during the video-cue-guided interview: In addition to the visual and auditory input of music videos that were visible on the recorded videos, Tara shared that these activities also provided written input as the subtitles were turned on.

## CHAPTER 4

### DISCUSSION

The current study combined four phases to collect both quantitative and qualitative data on the home literacy practices of multilingual families with a preschool child on the autism spectrum: an online survey, follow-up interviews, video observations, and video-cues. Analyzing the data, I aimed to answer the following three main questions: (1) What are home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?; (2) What factors influence home-literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?; (3) To what degree is multilingualism represented in the home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context?

#### **Participants**

Four mothers, one father, and one aunt of a child on the autism spectrum participated in the current study. A majority of participants were first-generation immigrants, with only two participants living in the country they were born in. While all participants currently lived in two countries that are considered part of the global north, three participants were born in countries belonging to the global south (Brazil, India, and Sudan). The six survey participants represented six different first languages (see Table 2). For five participants, the parent's first language was also the dominant household language or one of two primary household languages (P5). Only Sofia and Tim's dominant household language reflected neither the first language of either parent or the societal language, but the language both parents spoke with each other. This reflects the complex decisions multilingual families face, especially if both parents speak a different first language and do not speak their partner's first language.

All primary participants had grown up speaking a first language other than or in addition to the societal language of their country of residence. Tim, Sofia's husband, who

participated in the follow-up interview with his wife, was a native German currently living in Germany with his family. Only one participant reported the highest level of proficiency in the societal language of the country they lived in. A majority of participants reported high levels of formal education, with two participants reporting a Bachelor's degree and three participants reporting a Master's degree as their highest level of education. All participants reported at least two parents living in the household; therefore, no single-parent households were represented in the current study. Overall, the six participants represented diverse linguistic, cultural, and economic households.

The age range of the children whose caregivers participated in the current study was 4;1 to 5;8 years, putting the children at kindergarten age or a few years away from entering first grade. There were no outliers in the age of diagnosis, with all children being diagnosed between 2;4 and 3;0 years. All children were simultaneously (before age three) exposed to multiple languages. For four children, their first language reflected their parent's first language. Two children additionally spoke the societal language as one of their first languages (P3, P4). Only Damian, Sofia's son, spoke a first language that was neither parent's first language nor the societal language but the family's primary language of interaction. The most frequently used language by the children reflected the societal language for the four American participants that this demographic was reported for. Damian, Tim and Sofia's son, also most frequently used English, not the societal language German. During the interview, Sofia and Tim reflected that their son was starting to use more German words with increased exposure to the societal language outside of the home.

Children's communication level reported by their parents and the children's age, indicated that a majority of the children that were represented in the current study had complex communication needs. This is especially relevant as previous research on bilingualism in children on the autism spectrum has often excluded children with complex

communication needs (see Gilhuber et al., 2023 for a review). Communication levels were reported for their children by five out of the six participating parents. Only one child's communication was reported at the level of forming sentences, with three participants, all over the age of five years, communicating at phrase level and another participant, aged 4;3 years using single words to communicate. Four out of the six children used a form of AAC. Damian and Neil both used signs and pictures to communicate. As their mothers, Sofia and Tara, reported in the interview, both children used PECS. While Damian was currently still using PECS, Neil now primarily used an AAC app on a tablet as well as signs to communicate. Both Neil's and Damian's AAC were in English, which reflected the societal language for Neil, but not for Damian, for whom English was the dominant household language. Another participant's AAC device was reported to be bilingual, reflecting both the home language (Spanish) and the societal language (English). All three devices included the respective child's most frequently used language.

## **Home Language and Literacy Environment**

### *Home Literacy Practices and Routines*

The first research question that the current study aimed to answer is: What are home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context? Participants reported complex language and literacy environments that were unique to their families. Overall, families reported a number of different multimodal and overlapping literacy practices. For example, Sofia and Tim described using toy figures to reenact their son's favorite stories. Singing and nursery rhymes were the most frequently reported activities, and listening to audiobooks was the least frequent activity. Families' literacy practices also served different functions. For example, Tara reflected that building on her son's interest in music, they used songs to teach him signs.

Common strategies like pointing toward illustrations and reading the text out loud were the two most frequently reported reading strategies parents said they used. More in-depth interactions with the text, for example, pausing to ask questions, were only reported by a small number of participants.

Parents were the family members most commonly involved in literacy activities, followed by siblings. Five out of the six participating households reported multiple children living in the household. Puzzles and board or card games were two activities siblings were involved in as frequently as parents. This aligns with previous research that found families' home literacy practices to frequently include sibling interactions (Kibler et al., 2020).

Follow-up interviews sometimes offered additional perspectives to the information participants provided in the survey. For example, no participant reported grandparents as family members involved in reading, yet in her interview, Sofia discussed that her mother-in-law regularly reads to her children.

The first sub-question aimed to observe what routines shape the home literacy experiences of multilingual preschool children on the autism spectrum. Families' daily routines depended primarily on their children's kindergarten and preschool as well as on therapy schedules. Parent interviews indicated that outside of set appointments, child interest was a deciding factor for other routines. Sofia, Asim, and Tara all reflected that they allowed their child to choose the activities they engaged in during free-time. Asim discussed that the weather was a deciding factor in their routines and schedules, specifically on the weekends. The three survey questions that investigated child interest showed that child requests for literacy activities like being told a story and being read to matched the frequency of how often parents reported doing these activities. The routine that most frequently incorporated books were bedtime stories.



The second sub-question focused on the media that are included in the home literacy experiences of multilingual preschool children on the autism spectrum. Videos were the most frequently reported media overall. This was also reflected in the video recordings submitted by Tara and Sofia in phase three of the current study. Books were the media most frequently used for reading, followed by videos of books. Overall, some new technologies like videos played a large role in families' home literacy practices, while other new media like audiobooks and eBooks held little relevance. One potential reason for this was reflected by Tara in the video-cue interview: She reflected that she felt audio input by itself did not keep her son as engaged as the combined audio-visual input videos provide.

### ***Factors Influencing Home Language and Literacy Practices***

The second research question I aimed to answer focused on factors that influence home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual home environment. One of the sub-research questions specifically considered which sociodemographic, sociolinguistic, and cultural factors influence the home literacy experiences of preschool children on the autism spectrum growing up in a multilingual context. Aligning with previous research (e.g., Howard et al., 2021a), parents discussed several factors that influenced their home language and literacy practices, including the importance assigned to the home versus the societal language and their child's oral language development. One of the most important factors for the participating families' home literacy practices was child interest. All three interview participants reflected on how their child's interest guides the selection of activities and media. Difficulties with social interaction that are common in children on the autism spectrum (American Psychiatric Association, 2013) appeared to be an underlying reason why parents assigned such high importance to incorporating their child's interests into their home activities. Tara, Sofia, and Sofia's husband, Tim, all discussed that their child's interests decided many of their home literacy

activities. Tim reflected that one of the reasons he shifted from speaking German to his children to English was because he felt like he was missing out on opportunities to connect with his son, whose dominant language is English, by speaking German. Tara and Sofia both stated that they purchased literacy materials their child had shown an interest in.

Availability of materials did not seem to be a deciding factor influencing the home literacy environments of participating families. While none of the families that reported having bilingual books in the household had more than ten bilingual books, which was less than one-tenth of the children's books Tara reported having in her household, none of the interview participants suggested that lack of availability of materials was an issue. Sofia and Tim stated that even though many of the books in their household were in German, they often retold the stories in English for their son. Tara reported that most of the children's books in her family's home were Chinese and named the library as a resource for getting both books and audiobooks. Also, videos, the most frequently used media overall, are easily available through internet apps like YouTube Kids and provide access to different languages and different language settings.

Another sub-question of the second research question specifically considered the factors that influence parents' language choices for providing literacy experiences for their children. Overall, a number of factors influenced the choices parents made for the language and literacy environment they provided for their children. Both official and unofficial language policies affected families' home literacy environment. The three parents who participated in the follow-up interview all reflected on the importance of English. For two of the three families, English was the dominant language of the society they lived in, but the participating family from Germany also highlighted the importance of English, both for interactions as family members but also for their children's future. English is considered to be one of the most useful foreign languages to know by a majority of Europeans (European

Commission, 2012). The usefulness of a language is often measured by how many people this language allows you to converse with, assigning English high transnational linguistic capital (Gerhards, 2014).

During the interview, I also asked parents whether they had made any changes to their home language and literacy environment after their child was diagnosed with autism. While the autism diagnosis itself did not seem to prompt immediate changes, the fact that all three children experienced delays in their oral language development caused parents to make changes to their home language environment. Two of the three interview participants limited their languages of interaction with their child primarily to one language and reflected on delays in their child's language development as the primary reason for these changes. This aligns with previous research where parents reported concerns about the effects bilingualism has on their autistic children's language development (Hampton et al., 2017; Yu, 2013).

Parent interviews also provided insight into how parents' language proficiency influenced the literacy experiences they provided for their children. Previous studies have shown that parents perceiving their own proficiency in a language as limited can make it difficult for parents to comfortably speak this language with their child (Fernandez y Garcia et al., 2012). Sofia, who reported limited proficiency in German, reflected that her lack of proficiency was a reason why she primarily spoke English with her children and that she preferred to leave the German interactions to her husband and mother-in-law. However, again underscoring the importance of child interest, she amended that she does read to her children in German if they request it. On the other hand, Asim, who reported high proficiency in English, reported that both he and his wife were comfortable speaking English with their son and also preferred for his son's services to be delivered in English at this point. Tara recounted an incident where a service provider had criticized her English as accented and indicated that this might negatively impact her son's language development. Tara reflected

that this advice made her self-conscious and interact less for a while, but she said she had moved on from the incident. Overall, other factors like child interest and the importance of the societal language or the family's dominant language of interaction seemed to have a stronger influence on the literacy experiences parents provided for their children than their own language proficiency.

### ***The Role of Multilingualism in the Home Language Environment***

The third research question aimed to analyze to what degree multilingualism was represented in the home literacy practices of families with a preschool child on the autism spectrum growing up in a multilingual context. All participating families lived in a complex multilingual environment unique to them. Even families who had made the decision to only speak one language with their autistic child shared experiences that highlighted that their home language environment is too complex to provide a simple answer to the question of whether their interactions with their child are primarily monolingual or multilingual. For example, Asim, who explained that he and his wife had made the decision to only speak English with their son, stated that they still used some Arabic words with him. In addition, all other family members in the home primarily interacted in Arabic with each other, meaning that their child still lived in a multilingual environment, even if their own interactions were dominantly conducted in one language. Tara and her husband, who were both highly supportive of multilingualism, provided a multilingual home environment for their three children with the languages they spoke themselves, media like books in different languages, and hiring au-pairs.

The interactions reflected in the video recordings two participants submitted showed no occurrences of translanguaging for Tara and her son Neil and only a few translanguaging occurrences for Sofia but none for her son Damian. Translanguaging occurrences for the children might have been limited by the fact that their AAC devices, which were their

primary modes of communication, were not bilingual but reflected either the dominant societal language (Neil) or the household language (Damian).

The two follow-up questions of the third research question considered to what degree non-dominant languages are represented in the home literacy experiences and to what degree the family's oral communication language is reflected in the children's other home literacy experiences. A majority of the participants ( $n = 5$ ) listed only one main household language. Ada (P5), the only participant that listed two languages as the main household language, was also the only participant who reported the societal language as one of the main household languages. All participants reported that their partner spoke the same language with their child as them. Therefore, each participating household represented a home language that was considered a non-dominant language in the societal context the families lived in. Only for one parent was the main language of interaction with their child not the language they preferred to speak with their child.

Other than the families' languages of interaction, all families reported the societal language as being part of the literacy activities they engaged in with their children. Whether they engaged in the specific activity in the non-dominant household language or the societal language seemed to depend on child interest as well as parents' own experiences. For example, singing songs was the activity parents most frequently conducted in their native language. This aligns with previous research that has found parents' own language experiences to have a strong influence on the decisions they made for their family's home language policy (King & Fogle, 2006; Showstack & García-Mateus, 2022).

### **Service Providers and Policies in the United States and Germany**

The experiences parents reflected in the interviews indicated a lack of knowledge of service providers regarding multilingualism and the continued perpetuation of stereotypes surrounding multilingualism. Two parents reported receiving professional advice that

providing a multilingual language environment might negatively impact their child's language development, which reflects previous parental reports (e.g., Fernandez y Garcia et al., 2012). Tara reflected on the hurtful experience of having a service provider claim that her accented English was an insufficient language model for her son's language development. Sofia stated that service providers had told her that bilingualism might be the reason for her son's language delay.

A previous study found bilingual service providers to be more supportive of bilingual environments for children on the autism spectrum (Howard et al., 2021b). However, this reflects only a small portion of service providers. For example, 8.3% of the members of the American Speech-Language-Hearing Association (2023), identified as multilingual service providers. Aligning with previous research that has concluded that multilingual parents were frequently advised to only use one language with their autistic child (Fernandez y Garcia et al., 2012; Kremer-Sadlik, 2005), two parents in the current study reported having received similar advice from service providers. This indicates that service providers frequently consider the intersection of multilingualism and an autism diagnosis to be an additional challenge for children's language development.

In summary, the advice service providers offered participants of the current study did not reflect the current state of research on multilingualism and autism. This indicates the need for professional development opportunities for practitioners to be able to provide CLD families of children on the autism spectrum with evidence- and research-based guidance.

None of the three interview participants reported previous guidance on supporting their child's literacy development. Both Tara and Sofia expressed an interest in information on supporting their child's literacy development. Asim reflected that he was comfortable waiting until his son started school before considering literacy interventions.

A relevant policy difference between the U.S. and Germany is that it is not mandated that the German equivalent of the IEP needs to be translated into the family's dominant language. Sofia and Tim reflected on the challenges of only receiving therapy materials and having parent-teacher conferences in German. Even with a prominent language like English, the most commonly spoken foreign language in most of Europe (European Commission, 2012), service providers seemed incapable of providing translations for the family. Future research should investigate what resources are needed to better prepare service providers to incorporate culturally responsive strategies to support CLD families.

Another difference between the two countries is that Applied Behavior Analysis (ABA) is not easily available in Germany, with only a few service providers across the country. While both Tara and Asim reflected ABA services as an important part of their child's weekly routine, Sofia and Tim were not familiar with ABA services.

These examples reflect that local policies have an influence on families' home language and literacy environment. The role and importance of the societal language is an important consideration in families' decisions regarding their home language environment, specifically when they are faced with the difficult decision of potentially reducing their home language input. Instead of perpetuating harmful notions about bilingualism that are not supported but contradicted by research, service providers should consider the strengths that families' home language and literacy practices provide. Parents in the current study reflected many efforts to follow their child's interests to engage with their child. The multimodal literacy practices already established in families offer many valuable starting points for potential interventions. To honor families' cultural and linguistic traditions, service providers should aim to adapt evidence-based practices to build on families' existing routines.

### **Limitations, Reflections, and Recommendations**

The current study is based on a small sample size and reflects the individual home literacy environments of six families. The literacy practices reported by the families that participated in the current study are a representation of the respective family and are not meant to represent a specific group or culture. Only one family from Germany participated, limiting the comparison of policies between the U.S. and Germany.

Half of the participants ( $n = 3$ ) reported a Master's degree as their highest level of education and the highest available category of household income. Two more participants reported holding a Bachelor's degree. This reflects that a majority of the participants had high levels of formal education. At least half of the represented households were affluent, which affects the resources parents had access to for providing material- and media-rich home language and literacy environments. All participants differed in their cultural and linguistic backgrounds.

The current study did not formally assess the language skills of the children whose parents participated in the study. Parents only indirectly reported on their children's current level of oral language development in the first phase of the study, the online survey. Data from the survey indicated that a majority of the children might have complex communication needs. Four of the children used a form of AAC. However, this study did not specifically focus on the effect CNN might have on the decisions for the home language and literacy environment of multilingual families. One of the research questions of the current study aimed to investigate if parents made changes to their home language environment after their children were diagnosed with autism. Two of the three parents who completed the second phase of the current study, the follow-up interview, indicated that delays in their children's oral language development were the main reason why they decided to reduce the language input from multiple languages to one home language, more than the autism diagnosis itself.



Future studies should investigate to what degree delays in the oral language development of autistic children influence the decisions multilingual parents make for the home language environment they provide for their children.

In a reflection on the research design of the current study, I believe the combination of the four different phases to be a strength of the study design. The three follow-up phases added qualitative data to the survey data, extending the information caregivers provided in the questionnaire. The video recordings added another layer to the research design, showing children as active agents in their home literacy environment. In addition, the videos showed child preferences for different activities and media and added valuable insight to the parent reports of phases one and two. The video-cue analysis I conducted with Tara also reflected additional information that was not visible to me on the recorded videos. Having an ethnography-informed observation instead of asynchronous video recordings could have provided additional data on the family's home environment. On the other hand, the chosen research design allowed parents to decide which scenes of their home environment they wanted to share.

Despite the advantages of the design, there are also a number of limitations. For example, if participants indicated that they used signs or sign language to communicate with their child in the survey but did not agree to participate in the follow-up interview, I was unable to establish whether participants only used a few signs to support their child's communication or if American Sign Language or another sign language was one of the family's home languages.

While interventions like shared book reading have been proven to be effective in supporting preschool children's literacy development (e.g., Boyle et al., 2019), research has also highlighted that the way an evidence-based strategy is implemented decides its effectiveness (Pico & Woods, 2022). Growing up in a multilingual environment in a

monolingual society and having an autism diagnosis is an intersection of two markers of difference that require individualized support. Future interventions designed to support this population need to look at both these identities and, specifically, the intersection of these identities. To effectively advise parents on how to incorporate evidence-based practices into their home environment, service providers need to first gain an understanding of the sociolinguistic and cultural context of the family (Kibler et al., 2020). Considering literacy as a social practice and building on a multidisciplinary, multimodal understanding of literacy provides a foundation for a strength-based, family-centered, culturally responsive approach to supporting families' home literacy practices.

### **Conclusion**

All participating families reported unique and complex home language and literacy environments that included a variety of multimodal child-centered literacy practices. Besides print-based literacy interactions, families reported a number of oral and embodied literacy practices as well as literacy practices that incorporated new media like tablets and apps. All participating families reported multiple languages in either their home language environment or literacy practices or both. Several factors influenced parents' choices for the home language and literacy environment they provided for their children, with child interest being one of the most prominently reflected factors. Interview participants reported that practitioners frequently advised them to reduce their language input after their child was diagnosed with autism and that they had not received any professional guidance on supporting their child's literacy development. Future interventions need to draw from individualized and strength-based approaches to support multilingual families of preschool children on the autism spectrum.

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## Appendix A

### Survey (US Version – English)

Thank you for your willingness to complete this survey. We will ask you to answer a few questions about the languages you speak with your child and what type of literacy-related activities you engage in with your child. This survey contains three parts and will take about 30 minutes to complete.

The first part of this survey contains questions about your own demographics (e.g., which country you live in).

The second part of this survey contains questions regarding your child's demographics (e.g., your child's age).

The third part of this survey will ask you a few questions about which activities you regularly engage in with your child (e.g., singing songs, reading books, telling stories).

On the following page, more details about the survey will be provided in the form of a consent form. After the consent form, the survey will start.

**Please first answer the following questions:**

1. What is your relationship to the child you are answering for?
  - Mother
  - Father
  - Other:
  
2. How old is your child? Please provide your child's birthdate (mm/yy):
  
3. Has your child entered first grade yet?
  - Yes
  - No

**Part 1**

**Please indicate the following demographics for yourself:**

1. What is your age? \_\_\_\_\_ years

2. Which country do you live in?
3. Which country were you born in?
4. Please indicate your ethnicity/ethnicities (e.g.,  
Alaskan Native, African American, Chinese,  
Native Hawaiian, Mexican):
5. What is the highest level of education you  
have completed?
6. What is your occupation?
7. How many people live in your household  
(including yourself)?
8. Please estimate your annual household  
income:
9. What is the first language you learned (If you  
were exposed to multiple languages  
simultaneously from birth, please list all  
languages.)
- \_\_\_\_\_
- prefer not to say
- Some High school
- High school Diploma
- Some College
- Bachelor's Degree
- Master's Degree
- Doctoral Degree
- Other
- \_\_\_\_\_ adults
- \_\_\_\_\_ children
- Less than \$15,000
- \$15,001-\$30,000
- \$30,001-\$50,000
- \$50,001-\$70,000
- More than \$70,001

10. What other languages do you speak? Please list all other languages you speak and rate your proficiency (=how well you speak and understand the language) ranging from 1 (=low proficiency) to 5 (=high proficiency):
- Language:
- Proficiency:
- 1 (not well at all)
  - 2 (slightly well)
  - 3 (moderately well)
  - 4 (very well)
  - 5 (extremely well)

Language:

Proficiency:

- 1 (not well at all)
- 2 (slightly well)
- 3 (moderately well)
- 4 (very well)
- 5 (extremely well)

11. Which language(s) do you mostly speak with other household members?

12. Which language(s) do you regularly speak with your child?

13. Which language(s) do you prefer to speak with your child?

14. Which language(s) does your partner speak with your child?  \_\_\_\_\_  
 not applicable

## Part 2

Please indicate the following demographics for your child:



1. How old was your child when they officially received the diagnosis of an autism spectrum disorder? \_\_\_\_\_ years \_\_\_\_\_ months
2. Who provided the diagnosis?
3. Please state any additional (co-occurring) diagnoses (e.g., ADHD) that your child may have:
  - Additional diagnoses:
  - n/a (if your child does not currently have any additional diagnoses)
4. What is your child's first language (the first language your child was exposed to)? (If your child was exposed to multiple languages from birth, please list all languages.)
5. What language(s) does your child use most often?
6. What language(s) do you feel your child understands the best?
7. Please list all languages your child is exposed to and indicate the setting (e.g., home, school) in which the child is most exposed to the language:
  - Language:
    - Home
    - Preschool/kindergarten/daycare
    - Other
  
  - Language:
    - Home
    - Preschool/kindergarten/daycare

Other

8. Please indicate the age of your child when they were first exposed to each language:

Language			
Age of first exposure	<input type="checkbox"/> Before 12 months	<input type="checkbox"/> Before 12 months	<input type="checkbox"/> Before 12 months
	<input type="checkbox"/> 12-24 months	<input type="checkbox"/> 12-24 months	<input type="checkbox"/> 12-24 months
	<input type="checkbox"/> 25-36 months	<input type="checkbox"/> 25-36 months	<input type="checkbox"/> 25-36 months
	<input type="checkbox"/> After 36 months	<input type="checkbox"/> After 36 months	<input type="checkbox"/> After 36 months

9. Please estimate how long your child is currently exposed to each language on an average day:

Language			
Percentage of current daily exposure	<input type="checkbox"/> 0 hours)	<input type="checkbox"/> 0 hours	<input type="checkbox"/> 0 hours
	<input type="checkbox"/> 1-3 hours	<input type="checkbox"/> 1-3 hours	<input type="checkbox"/> 1-3 hours
	<input type="checkbox"/> 4-6 hours	<input type="checkbox"/> 4-6 hours	<input type="checkbox"/> 4-6 hours
	<input type="checkbox"/> 7-9 hours	<input type="checkbox"/> 7-9 hours	<input type="checkbox"/> 7-9 hours
	<input type="checkbox"/> more than 10 hours	<input type="checkbox"/> more than 10 hours	<input type="checkbox"/> more than 10 hours

10. Please indicate your child's current level of communication:

- Single words
- 2-word phrases
- 3-word phrases
- Simple sentences
- Complex sentences

11. Does your child use an augmentative and alternative communication device (e.g., a tablet, PECS) to communicate?

- Yes
- No

12. If your child is using an augmentative and alternative communication device, what language(s) is the AAC device in?

13. Does your child sign language to communicate?  Yes  
 No

14. Does your child use pictures to communicate?  Yes  
 No

### Part 3

**Please answer the following questions:**

1. Which of the following are activities that you engage in regularly with your child? Please select all that may apply:
- Singing songs
  - Nursery rhymes
  - Puzzles
  - Telling stories
  - Board/card games (e.g., memory)
  - Other
2. In a typical week, **how often** do you or another household member **tell stories** (e.g., fables, cautionary tales, bedtime stories, religious stories, ghost stories) to your child (can be with or without the assistance of pictures)?
- 7 days a week
  - 5-6 days a week
  - 3-4 days a week
  - 1-2 days a week
  - 0 days a week
3. **In what language(s)** do you **typically tell stories** to your child?
4. **Who** regularly **tells stories** to your child?
- Parents
  - Grandparents
  - Siblings

- Other:
5. In a typical week, **how often** do you or another household member **sing songs** to/with your child?
- 7 days a week  
 5-6 days a week  
 3-4 days a week  
 1-2 days a week  
 0 days a week
6. In **what language(s)** do you typically **sing** to/with your child?
7. **Who** regularly **sings** to your child?
- Parents  
 Grandparents  
 Siblings  
 Other:
8. In a typical week, **how often** do you or another household member do **nursery rhymes** with your child?
- 7 days a week  
 5-6 days a week  
 3-4 days a week  
 1-2 days a week  
 0 days a week
9. In **what language(s)** do you typically do **nursery rhymes** with your child?
10. **Who** regularly tells **nursery rhymes** to your child?
- Parents  
 Grandparents  
 Siblings  
 Other:

11. In a typical week, **how often** do you or another household member do **puzzles** with your child?
- 7 days a week
  - 5-6 days a week
  - 3-4 days a week
  - 1-2 days a week
  - 0 days a week
12. **Who** regularly does **puzzles** with your child?
- Parents
  - Grandparents
  - Siblings
  - Other:
13. In a typical week, **how often** do you or another household member **play board/card games** with your child (e.g., memory games)?
- 7 days a week
  - 5-6 days a week
  - 3-4 days a week
  - 1-2 days a week
  - 0 days a week
14. **Who** regularly **plays board/card games** with your child?
- Parents
  - Grandparents
  - Siblings
  - Other:
15. What media do you regularly use in your routines with your child? Please select all that may apply:
- Books
  - Magazines
  - eBooks
  - Read aloud books/audiobooks
  - Podcasts
  - Videos
  - TV shows/Movies

16. How do you engage in reading with your child? Please select all that may apply:
- Other:
  - Books
  - Magazines
  - eBooks
  - Read aloud books/audiobooks
  - Podcasts
  - Videos of books
  - Games
  - Other:
  - n/a (if you do not regularly read to your child)
17. How are books part of your daily routine?
- Morning routine
  - Playtime
  - Bedtime stories
  - Other:
  - Books are not part of our regular daily routine
18. How many children's books do you have in your household? Please provide an estimate:
19. Do you have any bilingual children's books in your household? If so, how many?
- Yes: \_\_\_\_\_
  - No
20. In a typical week, **how often** do you or another household member **read** to your child?
- 7 days a week
  - 5-6 days a week
  - 3-4 days a week
  - 1-2 days a week

- 0 days a week
21. In **what language(s)** do you typically **read** to your child?
22. **Who** regularly **reads** to your child?  Parents  
 Grandparents  
 Siblings  
 Other:
23. In a typical week, **how often** do you or another household member **listen to an audiobook** (or some other form of auditory recording of a story) with your child?  7 days a week  
 5-6 days a week  
 3-4 days a week  
 1-2 days a week  
 0 days a week
24. **Who** regularly listens to **audiobooks** with your child?  Parents  
 Grandparents  
 Siblings  
 Other:
25. **What language(s)** are the **audiobooks** in that you listen to with your child?
26. When you and your child look at a book together, what do you do? Please select all that apply:  Read the text out loud  
 Summarize the content in my own words  
 Pause and ask questions  
 Point towards illustrations in the book while reading  
 Pause and explain words

27. On average, **how often** does your child **request being told a story?**
- Act out the story
  - n/a (if you do not regularly look at books with your child)
  - Very often (Daily)
  - Often (Every other day)
  - Sometimes (Weekly)
  - Rarely (Monthly)
  - Never
28. On average, **how often** does your child **request being read to?**
- Very often (Daily)
  - Often (Every other day)
  - Sometimes (Weekly)
  - Rarely (Monthly)
  - Never
29. On average, **how often** does your child **request listening to an audiobook** (or some other form of auditory recording of a story)?
- Very often (Daily)
  - Often (Every other day)
  - Sometimes (Weekly)
  - Rarely (Monthly)
  - Never
30. If you would be willing to be contacted for a follow-up interview, please provide your email address here:

*Note.* Questions were adapted from Chow and Cummins (2003), Gonzalez-Barrero et al. (2021), Hood et al. (2008), Marian et al. (2007), Sénéchal et al. (1998) and amended by additional questions.



## Appendix B

### Survey (US Version – Spanish)

Gracias por su voluntad en completar este cuestionario. Le vamos a pedir de contestar algunas preguntas sobre los idiomas que usted habla con su niño y los tipos de actividades de literatura/alfabetismo usted participa con su niño. Este cuestionario contiene tres partes y demora aproximadamente 15-30 minutos para completar.

La primera parte de este cuestionario contiene preguntas sobre sus datos demográficos (p. ej. en que país vive).

La segunda parte de este cuestionario contiene preguntas sobre sus niño's datos demográficos (p. ej. la edad del niño)

La tercera parte de este cuestionario contiene preguntas sobre qué actividades uste participa regularmente con su niño (p. ej. cantar canciones, leer libros, contar historias).

La siguiente página contiene más detalles sobre el cuestionario en la forma de un formulario de consentimiento. Después del formulario de consentimiento, , empezará el cuestionario.

**Por favor conteste las siguientes preguntas:**

1. ¿Cuál es su relación al niño(a) que va a  Madre  
participar en el estudio?  Padre  
 Otro:
2. ¿Cuál es la fecha de nacimiento de su hijo/a  
(mes/año):
3. ¿Ha su niño(a) entrado al primer grado?  Si  
 No

**Parto 1**

**Por favor conteste las siguientes preguntas demográficas sobre usted:**

1. ¿Cuál es su edad? \_\_\_\_\_ años
2. ¿En qué país vive usted?
3. ¿En qué país nació usted?
4. Por favor indique su etnicidad (p.ej., Nativo de Alaska, afroamericano, chino, nativo de Hawái, mexicano):  
 \_\_\_\_\_  
 Prefiero no contestar
5. ¿Cuál es el nivel más alto de educación que usted ha completado?  
 Algo de escuela secundaria  
 Diploma de escuela secundaria  
 Algo de Universidad  
 Licenciatura  
 Maestría  
 Doctorado  
 Otro
6. ¿Cuál es su ocupación?
7. ¿Cuántas personas viven en su casa (incluyendo usted mismo/a)?  
 \_\_\_\_\_ adultos  
 \_\_\_\_\_ niños
8. Por favor indique una estimación del ingreso anual de su familia:  
 Menos de \$15,000  
 \$15,001-\$30,000  
 \$30,001-\$50,000  
 \$50,001-\$70,000  
 Mas de \$70,001
9. ¿Cuál es su lengua materna? (Si usted aprendió más que un idioma a la misma vez desde que nació, por favor indique todos los idiomas).

10. ¿Cuáles otros idiomas usted sabe hablar? Por favor indique los otros idiomas que usted habla y su nivel de competencia (hablar y entender el idioma) de 1 (baja competencia) a 5 (alta competencia):
- Idioma: \_\_\_\_\_
- Competencia:
- 1 (no muy bien)
  - 2 (ligeramente bien)
  - 3 (moderadamente bien)
  - 4 (muy bien)
  - 5 (extremadamente bien)

Idioma: \_\_\_\_\_

Competencia:

- 1 (no muy bien)
- 2 (ligeramente bien)
- 3 (moderadamente bien)
- 4 (muy bien)
- 5 (extremadamente bien)

11. ¿En cuáles idioma(s) habla principalmente con otros miembros de su hogar?

12. ¿Cuáles idiomas habla regularmente con su niño/a?

13. ¿En cuáles idioma(s) usted se prefiere hablar con su niño/a?

14. ¿En cuáles idioma(s) habla su pareja con su hijo/a?  \_\_\_\_\_  
 not aplica

## Parto 2

**Por favor conteste las siguientes preguntas demográficas para su niño:**

1. ¿Qué edad tenía su niño(a) cuando recibió un diagnóstico formal de autismo? \_\_\_\_\_ años \_\_\_\_\_ meses
2. ¿Quién hizo el diagnóstico?
3. Por favor indique otros diagnósticos (coexistentes) (p.ej. TDAH [ADHD]) que tiene su niño(a):
- Diagnósticos adicionales:  
 No aplica, su niño(a) no tiene otros diagnósticos corrientemente
4. ¿Cuál es la lengua materna de su niño(a) (el primer idioma que su niño(a) aprendió)? (Si su niño(a) aprendió más que un idioma desde que nació, por favor indique todos los idiomas.)
5. ¿En cuáles idioma(s) usa su hijo(a) con más frecuencia?
6. ¿En cuáles idioma(s) cree que su hijo(a) entiende mejor?
7. Por favor indique los idiomas que su niño(a) está aprendiendo y el lugar (p.ej., casa, escuela) en el cual su niño(a) escucha más ese idioma:
- Idioma:
- Casa  
 Preescolar/jardín de infantes/guardería  
 Otro
- Idioma:
- Casa  
 Preescolar/jardín de infantes/guardería

Otro

8. Para cada idioma del niño, por favor indique la edad de su niño(a) cuando fue expuesto a ese idioma por primera vez:

Idioma			
Edad de primera exposición	<input type="checkbox"/> Antes de los 12 meses <input type="checkbox"/> 12-24 meses <input type="checkbox"/> 25-36 meses <input type="checkbox"/> Después de los 36 meses	<input type="checkbox"/> Antes de los 12 meses <input type="checkbox"/> 12-24 meses <input type="checkbox"/> 25-36 meses <input type="checkbox"/> Después de los 36 meses	<input type="checkbox"/> Antes de los 12 meses <input type="checkbox"/> 12-24 meses <input type="checkbox"/> 25-36 meses <input type="checkbox"/> Después de los 36 meses

9. Por favor indique una estimación de cuánto tiempo que su niño(a) está expuesto a cada idioma cada día en promedio:

Idioma			
Porcentaje de exposición diaria	<input type="checkbox"/> 0 hora <input type="checkbox"/> 1-3 horas <input type="checkbox"/> 4-6 horas <input type="checkbox"/> 7-9 horas <input type="checkbox"/> 10 horas o mas	<input type="checkbox"/> 0 hora <input type="checkbox"/> 1-3 horas <input type="checkbox"/> 4-6 horas <input type="checkbox"/> 7-9 horas <input type="checkbox"/> 10 horas o mas	<input type="checkbox"/> 0 hora <input type="checkbox"/> 1-3 horas <input type="checkbox"/> 4-6 horas <input type="checkbox"/> 7-9 horas <input type="checkbox"/> 10 horas o mas

10. Indique el nivel actual de comunicación de su hijo(a):

- palabras sueltas (una palabra a la vez)
- frases de 2 palabras
- frases de 3 palabras
- oraciones simples
- oraciones complejas

11. ¿Su niño(a) usa un dispositivo de comunicación aumentativa y alternativa (p. ej. una Tablet/iPad, PECS) para comunicar?

- Si  
 No

12. ¿Si su hijo(a) usa un dispositivo de comunicación aumentativa y alternativa, en que idioma lo usa?

13. ¿Su hijo(a) usa señas o lenguaje de señas para comunicar?

- Si  
 No

14. ¿Su hijo(a) usa imágenes o dibujos para comunicar?

- Si  
 No

### Parto 3

**Por favor conteste las siguientes preguntas:**

1. ¿En cuáles de las siguientes actividades participa regularmente con su hijo(a)?  
Seleccione todo lo que sea aplicable:

- Cantar canciones  
 canciones infantiles  
 Rompecabezas  
 contar historias  
 Juegos de mesa y cartas (p. ej. juego de memoria)  
 Otro/a

2. En una semana típica, ¿**con qué frecuencia** usted u otro miembro del hogar **cuentan historias** (p. ej., fábulas, cuentos con moraleja, cuentos para dormir, historias religiosas,

- 7 días a la semana  
 5-6 días a la semana  
 3-4 días a la semana  
 1-2 días a la semana  
 0 días a la semana

historias de fantasmas) a su hijo(a) (pueden ser con o sin la ayuda de imágenes)?

3. ¿Típicamente, **en que idioma(s) cuenta**

**historia** su hijo(a)?

4. ¿**Quiénes** regularmente **cuentan historias** su hijo(a)?

Padres

Abuelos

Hermanos/as

Otros:

5. ¿Típicamente, **cuantos días a la semana** usted u otro miembro del hogar **canta canciones** con/a su hijo(a)?

7 días a la semana

5-6 días a la semana

3-4 días a la semana

1-2 días a la semana

0 días a la semana

6. ¿Típicamente, **en que idioma(s) canta** con/a su hijo(a)?

7. ¿**Quiénes** regularmente **cantan** con/a su hijo(a)?

Padres

Abuelos

Hermanos/as

Otros:

8. ¿Típicamente, **cuantas veces** por semana usted u otro miembro del hogar **canta canciones** infantiles con su hijo(a)?

7 días a la semana

5-6 días a la semana

3-4 días a la semana

1-2 días a la semana

0 días a la semana

9. ¿En qué idioma(s) usted típicamente **canta canciones** infantiles con su hijo(a)?
10. ¿Quiénes regularmente **cantan canciones** infantiles con su hijo(a)?
11. ¿Típicamente, **cuantas veces por semana** usted u otro miembro del hogar **hace rompecabezas** con su hijo(a)?
12. ¿Quién regularmente **hace rompecabezas** con su hijo/a?
13. ¿Típicamente, **cuantas veces** por semana usted u otro miembro del hogar **juega con juegos de mesa y/o cartas** con su hijo(a) (p. ej. juegos de memoria)?
14. ¿Quién **juega** regularmente **juegos de mesa/cartas** con su hijo/a?
- Padres
- Abuelos
- Hermanos/as
- Otros:
- 7 días a la semana
- 5-6 días a la semana
- 3-4 días a la semana
- 1-2 días a la semana
- 0 días a la semana
- Padres
- Abuelos
- Hermanos/as
- Otros:
- 7 días a la semana
- 5-6 días a la semana
- 3-4 días a la semana
- 1-2 días a la semana
- 0 días a la semana
- Padres
- Abuelos
- Hermanos/as
- Otros:



15. ¿Qué medios utiliza habitualmente en sus rutinas con su hijo/a? Por favor seleccione todo lo que pueda aplicar:
- Libros
  - Revistas
  - e-books (libros electrónicos)
  - Libros en voz alta/ audiolibros
  - Podcasts
  - Videos
  - Programas de televisión/películas
  - Otro:
16. ¿En qué manera(s) participa en lectura con su hijo(a)? Seleccione todo lo que sea aplicable:
- Libros
  - Revistas
  - e-books (libros electrónicos)
  - Libros en voz alta/ audiolibros
  - Podcasts
  - Videos de libros
  - Juegos
  - Otro:
  - n/a (no leo regularmente con el niño)
17. ¿En qué manera(s) son libros parte de sus rutinas diarias?
- rutina de la mañana
  - tiempo de juego
  - cuentos antes de dormir
  - otro:
  - n/a, libros no son parte de nuestra rutina regular
18. ¿Cuántos libros infantiles tiene en su casa?
- Por favor indique una estimación:

19. ¿Usted tiene libros infantiles bilingües en su casa? ¿Si es así, cuántos?
- Si: \_\_\_\_\_
- No
20. ¿Típicamente, **cuántas veces** por semana usted u otro miembro del hogar **lee** con su hijo(a)?
- 7 días a la semana
- 5-6 días a la semana
- 3-4 días a la semana
- 1-2 días a la semana
- 0 días a la semana
21. ¿Típicamente, en **que idioma(s)** lee a su hijo(a)?
22. ¿**Quiénes leen** regularmente a su hijo(a)?
- Padres
- Abuelos
- Hermanos/as
- Otros:
23. ¿Típicamente, **cuántas veces** por semana usted u otro miembro del hogar **escucha un audiolibro** (u otra forma auditiva de una historia) con su hijo(a)?
- 7 días a la semana
- 5-6 días a la semana
- 3-4 días a la semana
- 1-2 días a la semana
- 0 días a la semana
24. ¿**Quiénes** regularmente **escucha un audiolibro** con su hijo(a)?
- Padres
- Abuelos
- Hermanos/as
- Otros:
25. ¿En **qué idioma(s)** son los **audiolibros** que escucha con su hijo(a)?

26. ¿Cuándo usted y su hijo(a) miran un libro juntos, en que maneras cuentas la historia? ¿Qué haces? Por favor seleccione todo lo que sea aplicable:
- Leer la historia en voz alta
  - Resumir el contenido de la historia en mis propias palabras
  - Parar para hacer preguntas
  - Señalar a las imágenes en el libro mientras estoy leyendo
  - Parar para explicar palabras
  - Actúa la historia
  - N/A (no miro libros regularmente con el niño)
27. ¿En promedio, **con cuanta frecuencia** su hijo(a) pide que le **cuenten una historia**?
- Muy seguido (todos los días)
  - Seguido (Inter diario)
  - A veces (Cada semana)
  - Raramente (Cada mes)
  - Nunca
28. ¿En promedio, **con cuanta frecuencia** su hijo(a) pide que le **lean un libro**?
- Muy seguido (todos los días)
  - Seguido (Inter diario)
  - A veces (Cada semana)
  - Raramente (Cada mes)
  - Nunca
29. ¿En promedio, **con cuanta frecuencia** su hijo(a) pide **escuchar un audiolibro** (u otra forma de historia auditiva)?
- Muy seguido (todos los días)
  - Seguido (Inter diario)
  - A veces (Cada semana)
  - Raramente (Cada mes)
  - Nunca

30. Si está interesado en ser contactado para una

entrevista seguimiento, proporcione su

dirección de correo electrónico aquí:

*Note.* Questions were adapted from Chow and Cummins (2003), Gonzalez-Barrero et al. (2021), Hood et al. (2008), Marian et al. (2007), Sénéchal et al. (1998) and amended by additional questions.

## Appendix C

### Survey (Germany Version – English)

Thank you for your willingness to complete this survey. We will ask you to answer a few questions about the languages you speak with your child and what type of literacy-related activities you engage in with your child. This survey contains three parts and will take about 30 minutes to complete.

The first part of this survey contains questions about your own demographics (e.g., which country you live in).

The second part of this survey contains questions regarding your child's demographics (e.g., your child's age).

The third part of this survey will ask you a few questions about which activities you regularly engage in with your child (e.g., singing songs, reading books, telling stories).

On the following page, more details about the survey will be provided in the form of a consent form. After the consent form, the survey will start.

**Please first answer the following questions:**

1. What is your relationship to the child you are answering for?
  - Mother
  - Father
  - Other:
  
2. How old is your child? Please provide your child's birthdate (mm/yy):
  
3. Has your child entered first grade yet?
  - Yes
  - No

**Part 1**

**Please indicate the following demographics for yourself:**

1. What is your age? \_\_\_\_\_ years

2. Which country do you live in?
3. Which country were you born in?
4. Please indicate your ethnicity/ethnicities (e.g., Italian, German, Turkish):  \_\_\_\_\_  
 prefer not to say
5. What is the highest level of education you have completed?  9th grade  
 10th grade  
 High school  
 Bachelor's Degree  
 Master's Degree  
 Doctoral Degree  
 Other
6. What is your occupation?
7. How many people live in your household (including yourself)? \_\_\_\_\_ adults  
\_\_\_\_\_ children
8. Please estimate your annual household income:  Less than 15.000€  
 15.001€ - 30.000€  
 30.001€ - 50.000€  
 50.001€ - 70.000€  
 More than 70.001€
9. What is the first language you learned (If you were exposed to multiple languages simultaneously from birth, please list all languages.)

10. What other languages do you speak? Please list all other languages you speak and rate your proficiency (=how well you speak and understand the language) ranging from 1 (=low proficiency) to 5 (=high proficiency):
- Language:
- Proficiency:
- 1 (not well at all)
  - 2 (slightly well)
  - 3 (moderately well)
  - 4 (very well)
  - 5 (extremely well)

Language:

Proficiency:

- 1 (not well at all)
- 2 (slightly well)
- 3 (moderately well)
- 4 (very well)
- 5 (extremely well)

11. Which language(s) do you mostly speak with other household members?

12. Which language(s) do you regularly speak with your child?

13. Which language(s) do you prefer to speak with your child?

14. Which language(s) does your partner speak with your child?  \_\_\_\_\_  
 not applicable

## Part 2

Please indicate the following demographics for your child:

1. How old was your child when they officially received the diagnosis of an autism spectrum disorder? \_\_\_\_\_ years \_\_\_\_\_ months
2. Who provided the diagnosis?
3. Please state any additional (co-occurring) diagnoses (e.g., ADHD) that your child may have:
  - Additional diagnoses:
  - n/a (if your child does not currently have any additional diagnoses)
4. What is your child's first language (the first language your child was exposed to)? (If your child was exposed to multiple languages from birth, please list all languages.)
5. What language(s) does your child use most often?
6. What language(s) do you feel your child understands the best?
7. Please list all languages your child is exposed to and indicate the setting (e.g., home, school) in which the child is most exposed to the language:
  - Language:
    - Home
    - Preschool/kindergarten/daycare
    - Other
  
  - Language:
    - Home
    - Preschool/kindergarten/daycare



Other

8. Please indicate the age of your child when they were first exposed to each language:

Language			
Age of first exposure	<input type="checkbox"/> Before 12 months	<input type="checkbox"/> Before 12 months	<input type="checkbox"/> Before 12 months
	<input type="checkbox"/> 12-24 months	<input type="checkbox"/> 12-24 months	<input type="checkbox"/> 12-24 months
	<input type="checkbox"/> 25-36 months	<input type="checkbox"/> 25-36 months	<input type="checkbox"/> 25-36 months
	<input type="checkbox"/> After 36 months	<input type="checkbox"/> After 36 months	<input type="checkbox"/> After 36 months

9. Please estimate how long your child is currently exposed to each language on an average day:

Language			
Percentage of current daily exposure	<input type="checkbox"/> 0 hours)	<input type="checkbox"/> 0 hours	<input type="checkbox"/> 0 hours
	<input type="checkbox"/> 1-3 hours	<input type="checkbox"/> 1-3 hours	<input type="checkbox"/> 1-3 hours
	<input type="checkbox"/> 4-6 hours	<input type="checkbox"/> 4-6 hours	<input type="checkbox"/> 4-6 hours
	<input type="checkbox"/> 7-9 hours	<input type="checkbox"/> 7-9 hours	<input type="checkbox"/> 7-9 hours
	<input type="checkbox"/> more than 10 hours	<input type="checkbox"/> more than 10 hours	<input type="checkbox"/> more than 10 hours

10. Please indicate your child's current level of communication:

- Single words
- 2-word phrases
- 3-word phrases
- Simple sentences
- Complex sentences

11. Does your child use an augmentative and alternative communication device (e.g., a tablet, PECS) to communicate?

- Yes
- No

12. If your child is using an augmentative and alternative communication device, what language(s) is the AAC device in?
13. Does your child sign language to communicate?  Yes  
 No
14. Does your child use pictures to communicate?  Yes  
 No

### Part 3

#### Please answer the following questions:

1. Which of the following are activities that you engage in regularly with your child? Please select all that may apply:
- Singing songs
  - Nursery rhymes
  - Puzzles
  - Telling stories
  - Board/card games (e.g., memory)
  - Other
2. In a typical week, **how often** do you or another household member **tell stories** (e.g., fables, cautionary tales, bedtime stories, religious stories, ghost stories) to your child (can be with or without the assistance of pictures)?
- 7 days a week
  - 5-6 days a week
  - 3-4 days a week
  - 1-2 days a week
  - 0 days a week
3. In **what language(s)** do you typically **tell stories** to your child?
4. **Who** regularly **tells stories** to your child?
- Parents
  - Grandparents
  - Siblings

- Other:
5. In a typical week, **how often** do you or another household member **sing songs** to/with your child?
- 7 days a week  
 5-6 days a week  
 3-4 days a week  
 1-2 days a week  
 0 days a week
6. In **what language(s)** do you typically **sing** to/with your child?
7. **Who** regularly **sings** to your child?
- Parents  
 Grandparents  
 Siblings  
 Other:
8. In a typical week, **how often** do you or another household member do **nursery rhymes** with your child?
- 7 days a week  
 5-6 days a week  
 3-4 days a week  
 1-2 days a week  
 0 days a week
9. In **what language(s)** do you typically do **nursery rhymes** with your child?
10. **Who** regularly tells **nursery rhymes** to your child?
- Parents  
 Grandparents  
 Siblings  
 Other:

11. In a typical week, **how often** do you or another household member do **puzzles** with your child?
- 7 days a week
  - 5-6 days a week
  - 3-4 days a week
  - 1-2 days a week
  - 0 days a week
12. **Who** regularly does **puzzles** with your child?
- Parents
  - Grandparents
  - Siblings
  - Other:
13. In a typical week, **how often** do you or another household member **play board/card games** with your child (e.g., memory games)?
- 7 days a week
  - 5-6 days a week
  - 3-4 days a week
  - 1-2 days a week
  - 0 days a week
14. **Who** regularly **plays board/card games** with your child?
- Parents
  - Grandparents
  - Siblings
  - Other:
15. What media do you regularly use in your routines with your child? Please select all that may apply:
- Books
  - Magazines
  - eBooks
  - Read aloud books/audiobooks
  - Podcasts
  - Videos
  - TV shows/Movies

16. How do you engage in reading with your child? Please select all that may apply:
- Other:
  - Books
  - Magazines
  - Ebooks
  - Read aloud books/audiobooks
  - Podcasts
  - Videos of books
  - Games
  - Other:
  - n/a (if you do not regularly read to your child)
17. How are books part of your daily routine?
- Morning routine
  - Playtime
  - Bedtime stories
  - Other:
  - Books are not part of our regular daily routine
18. How many children's books do you have in your household? Please provide an estimate:
19. Do you have any bilingual children's books in your household? If so, how many?
- Yes: \_\_\_\_\_
  - No
20. In a typical week, **how often** do you or another household member **read** to your child?
- 7 days a week
  - 5-6 days a week
  - 3-4 days a week
  - 1-2 days a week

- 0 days a week
21. In **what language(s)** do you typically **read** to your child?
22. **Who** regularly **reads** to your child?  Parents  
 Grandparents  
 Siblings  
 Other:
23. In a typical week, **how often** do you or another household member **listen to an audiobook** (or some other form of auditory recording of a story) with your child?  7 days a week  
 5-6 days a week  
 3-4 days a week  
 1-2 days a week  
 0 days a week
24. **Who** regularly listens to **audiobooks** with your child?  Parents  
 Grandparents  
 Siblings  
 Other:
25. **What language(s)** are the **audiobooks** in that you listen to with your child?
26. When you and your child look at a book together, what do you do? Please select all that apply:  Read the text out loud  
 Summarize the content in my own words  
 Pause and ask questions  
 Point towards illustrations in the book while reading  
 Pause and explain words

- Act out the story  
 n/a (if you do not regularly look at books with your child)
27. On average, **how often** does your child **request being told a story?**
- Very often (Daily)  
 Often (Every other day)  
 Sometimes (Weekly)  
 Rarely (Monthly)  
 Never
28. On average, **how often** does your child **request being read to?**
- Very often (Daily)  
 Often (Every other day)  
 Sometimes (Weekly)  
 Rarely (Monthly)  
 Never
29. On average, **how often** does your child **request listening to an audiobook** (or some other form of auditory recording of a story)?
- Very often (Daily)  
 Often (Every other day)  
 Sometimes (Weekly)  
 Rarely (Monthly)  
 Never
30. If you would be willing to be contacted for a follow-up interview, please provide your email address here:

*Note.* Questions were adapted from Chow and Cummins (2003), Gonzalez-Barrero et al. (2021), Hood et al. (2008), Marian et al. (2007), Sénéchal et al. (1998) and amended by additional questions.

## Appendix D

### Survey (Germany Version – German)

Vielen Dank für Ihre Bereitschaft diesen Fragebogen zu beantworten. Sie werden gebeten einige Fragen bezüglich der Sprachen, die Sie mit Ihrem Kind sprechen, zu beantworten.

Außerdem fragen wir Sie nach den Schriftspracherfahrungen Ihres Kindes. Dieser

Fragebogen besteht aus drei Teilen und die Beantwortung wird schätzungsweise 15-30

Minuten in Anspruch nehmen.

Der erste Teil dieses Fragebogens beinhaltet Fragen über Ihren persönlichen Hintergrund (z.B. in welchem Land Sie leben).

Der zweite Teil beinhaltet allgemeine Fragen über Ihr Kind (z.B. das Alter Ihres Kindes).

Der dritte Teil beinhaltet Fragen über verschiedene Alltagsaktivitäten, die Sie mit Ihrem Kind unternehmen (z.B. Lieder singen, Bücher lesen, Geschichten erzählen).

#### **Bitte beantworten Sie zuerst die folgenden Fragen:**

1. In welcher Beziehung stehen Sie zu dem Kind  Mutter  
für das Sie antworten?  Vater  
 Andere Beziehung:
2. Wie alt ist Ihr Kind? Bitte geben Sie den  
Geburtstag Ihres Kindes an (mm/jj):
3. Besucht Ihr Kind bereits die erste Klasse der  Ja  
Grundschule?  Nein

#### **Teil 1**

#### **Bitte beantworten Sie die folgenden Fragen betreffend Ihrer eigenen Person:**

1. Wie alt sind Sie? \_\_\_\_\_ Jahre
2. In welchem Land wohnen Sie momentan?
3. In welchem Land wurden Sie geboren?



4. Bitte geben Sie Ihre Nationalität an (z.B. deutsch, italienisch, polnisch, türkisch):
- \_\_\_\_\_
- Ich ziehe es vor nicht zu antworten.
5. Was ist Ihr höchster Schulabschluss?
- (qualifizierter) Hauptschulabschluss/  
Mittelschulabschluss
- Mittlere Reife
- Abitur
- Bachelor
- Master
- Promotion
- Anderer Abschluss
6. Was ist Ihr Beruf?
7. Wie viele Personen leben in Ihrem Haushalt  
(Sie selbst mit einbezogen)?
- \_\_\_\_\_ Erwachsene
- \_\_\_\_\_ Kinder
8. Bitte schätzen Sie das jährliche Einkommen  
Ihres Haushalts:
- weniger als 15.000€
- 15.001€ - 30.000€
- 30.001€ - 50.000€
- 50.001€ - 70.000€
- mehr als 70.001€
9. Was ist Ihre Muttersprache/Erstsprache?  
(Wenn Sie mehrsprachig aufgewachsen sind,  
führen Sie bitte alle Sprachen auf.)
10. Welche anderen Sprachen sprechen Sie? Bitte  
listen Sie alle anderen Sprachen, die Sie  
sprechen, auf und schätzen Sie Ihre Kenntnisse
- Sprache:
- Kenntnisse:
- 1 (sehr geringe Kenntnisse)

der Sprache ein (1 = sehr geringe Kenntnisse, 5 = sehr gute Kenntnisse):

- 2 (geringe Kenntnisse)
- 3 (durchschnittliche Kenntnisse)
- 4 (gute Kenntnisse)
- 5 (sehr gute Kenntnisse)

Sprache:

Kenntnisse:

- 1 (sehr geringe Kenntnisse)
- 2 (geringe Kenntnisse)
- 3 (durchschnittliche Kenntnisse)
- 4 (gute Kenntnisse)
- 5 (sehr gute Kenntnisse)

11. In welchen Sprachen unterhalten Sie sich mit anderen Mitgliedern Ihres Haushaltes?

12. Welche Sprache(n) sprechen Sie regelmäßig mit Ihrem Kind?

13. Welche Sprache sprechen Sie am liebsten mit ihrem Kind?

14. Welche Sprache(n) spricht Ihr Partner mit Ihrem Kind?

\_\_\_\_\_

nicht zutreffend

## Teil 2

**Bitte beantworten Sie die folgenden Fragen in Bezug auf Ihr Kind:**

1. Wie alt war Ihr Kind als die Diagnose \_\_\_\_\_ Jahre \_\_\_\_\_ Monate  
Autismus-Spektrum-Störung gestellt wurde?
2. Wer hat die Diagnose gestellt?
3. Bitte geben Sie alle anderen Diagnosen (z.B.  Andere Diagnosen:  
ADHS) an, die bei Ihrem Kind gestellt wurden:  nicht zutreffend (wenn Ihr Kind  
momentan keine weiteren Diagnosen  
hat)
4. Was ist die Erstsprache Ihres Kindes (die erste  
Sprache, die Ihr Kind wahrgenommen hat)?  
Falls Ihr Kind mehreren Sprachen gleichzeitig  
von Geburt an, ausgesetzt war, geben Sie bitte  
alle zutreffenden Sprachen an:
5. Welche Sprache nutzt ihr Kind am häufigsten?
6. Welche Sprache versteht Ihr Kind Ihrer  
Einschätzung nach am besten?
7. Welche anderen Sprachen spricht/hört Ihr Kind Sprache:  
regelmäßig (sowohl zuhause als auch in der  Zuhause  
Schule)? Bitte geben Sie alle Sprachen an und  Kinderkrippe/  
den Kontext, in dem ihr Kind die Sprache am Kindergarten/Vorschule  
meisten spricht/hört:  Anderer Kontext
- Sprache:  
 Zuhause  
 Kinderkrippe/  
Kindergarten/Vorschule

Anderer Kontext

8. Bitte geben Sie an, in welchem Alter Ihr Kind der jeweiligen Sprache zum ersten Mal ausgesetzt war:

Sprache			
Alter des Kindes (in Monaten) beim Erstkontakt mit der Sprache	<input type="checkbox"/> Jünger als 12 Monate	<input type="checkbox"/> Jünger als 12 Monate	<input type="checkbox"/> Jünger als 12 Monate
	<input type="checkbox"/> 12-24 Monate	<input type="checkbox"/> 12-24 Monate	<input type="checkbox"/> 12-24 Monate
	<input type="checkbox"/> 25-36 Monate	<input type="checkbox"/> 25-36 Monate	<input type="checkbox"/> 25-36 Monate
	<input type="checkbox"/> Älter als 36 Monate	<input type="checkbox"/> Älter als 36 Monate	<input type="checkbox"/> Älter als 36 Monate

9. Bitte schätzen Sie ein, wie lange Ihr Kind jeder Sprache momentan durchschnittlich pro Tag ausgesetzt ist:

Language			
Zeitlicher Anteil eines regulären Tages, die das Kind der Sprache momentan ausgesetzt ist:	<input type="checkbox"/> 0 Stunden	<input type="checkbox"/> 0 Stunden	<input type="checkbox"/> 0 Stunden
	<input type="checkbox"/> 1-3 Stunden	<input type="checkbox"/> 1-3 Stunden	<input type="checkbox"/> 1-3 Stunden
	<input type="checkbox"/> 4-6 Stunden	<input type="checkbox"/> 4-6 Stunden	<input type="checkbox"/> 4-6 Stunden
	<input type="checkbox"/> 7-9 Stunden	<input type="checkbox"/> 7-9 Stunden	<input type="checkbox"/> 7-9 Stunden
	<input type="checkbox"/> 10 Stunden oder länger	<input type="checkbox"/> 10 Stunden oder länger	<input type="checkbox"/> 10 Stunden oder länger

10. Bitte schätzen Sie den momentanen

Einzelne Wörter

Sprachentwicklungsstand Ihres Kindes ein:

Zweiwortsätze (z.B. „Mama spielen“)

Dreiwortsätze

Einfache Sätze

Komplexe Sätze

11. Nutzt ihr Kind Medien zur Unterstützten Kommunikation (z.B. eine App, GoTalk)?  Ja  
 Nein
12. Falls Ihr Kind Medien zur Unterstützten Kommunikation nutzt, auf welche Sprache(n) ist das Gerät eingestellt?
13. Nutzt Ihr Kind Gebärdensprache, um zu kommunizieren?  Ja  
 Nein
14. Nutzt Ihr Kind Bilder, um zu kommunizieren?  Ja  
 Nein

### Teil 3

#### Bitte beantworten Sie die folgenden Fragen:

1. Welche der folgenden Aktivitäten unternehmen Sie regelmäßig mit Ihrem Kind? Bitte wählen Sie alle zutreffenden Möglichkeiten aus:
- Lieder singen  
 Reime/ Fingerspiele  
 Puzzle  
 Geschichten erzählen  
 Brettspiele/ Kartenspiele (z.B. Memory)  
 Andere Aktivität
2. **An wie vielen Tagen erzählen** Sie oder ein anderes Mitglied Ihres Haushaltes Ihrem Kind in einer regulären Woche eine **Geschichte** (z.B. Fabeln, Erzählungen, Gutenachtgeschichten, religiöse Geschichten, Gespenstergeschichten)? (dies kann mit oder ohne Bilder erfolgen)
- 7 Tage pro Woche  
 5-6 Tage pro Woche  
 3-4 Tage pro Woche  
 1-2 Tage pro Woche  
 0 Tage pro Woche

3. **In welcher Sprache erzählen** Sie Ihrem Kind

in der Regel **Geschichten**?

4. **Wer erzählt** Ihrem Kind regelmäßig

**Geschichten**?

Eltern

Großeltern

Geschwister

Andere:

5. **An wie vielen Tagen singen** Sie oder ein

anderes Mitglied Ihres Haushaltes in einer

regulären Woche **Lieder** mit Ihrem Kind/

Ihrem Kind Lieder vor?

7 Tage pro Woche

5-6 Tage pro Woche

3-4 Tage pro Woche

1-2 Tage pro Woche

0 Tage pro Woche

6. **In welcher Sprache singen** Sie in der Regel

**Lieder** mit Ihrem Kind?

7. **Wer singt** Ihrem Kind regelmäßig vor?

Eltern

Großeltern

Geschwister

Andere:

8. **An wie vielen Tagen** sprechen Sie oder ein

anderes Mitglied Ihres Haushaltes in einer

regulären Woche **Reime/Fingerspiele** mit

Ihrem Kind?

7 Tage pro Woche

5-6 Tage pro Woche

3-4 Tage pro Woche

1-2 Tage pro Woche

0 Tage pro Woche

9. **In welcher Sprache** sprechen Sie in der Regel

**Reime/Fingerspiele** mit Ihrem Kind?

10. **Wer** spricht Ihrem Kind regelmäßig **Reime/ Fingerspiele** vor?
- Eltern
  - Großeltern
  - Geschwister
  - Andere:
11. **An wie vielen Tagen** in einer regulären Woche spielen Sie oder ein anderes Mitglied Ihres Haushaltes mit Ihrem Kind mit **Puzzles**?
- 7 Tage pro Woche
  - 5-6 Tage pro Woche
  - 3-4 Tage pro Woche
  - 1-2 Tage pro Woche
  - 0 Tage pro Woche
12. **Wer** spielt regelmäßig mit Ihrem Kind mit **Puzzles**?
- Eltern
  - Großeltern
  - Geschwister
  - Andere:
13. **An wie vielen Tagen** spielen Sie oder ein anderes Mitglied Ihres Haushaltes in einer regulären Woche **Brettspiele/ Kartenspiele** (z.B. Memory) mit Ihrem Kind?
- 7 Tage pro Woche
  - 5-6 Tage pro Woche
  - 3-4 Tage pro Woche
  - 1-2 Tage pro Woche
  - 0 Tage pro Woche
14. **Wer** spielt regelmäßig **Brettspiele/ Kartenspiele** mit Ihrem Kind?
- Eltern
  - Großeltern
  - Geschwister
  - Andere:
15. Bitte wählen Sie alle Medien aus, die Teil Ihrer regulären Routinen mit Ihrem Kind sind:
- Bücher
  - Zeitschriften
  - eBooks

16. Welche Medien nutzen Sie, um Ihrem Kind vorzulesen? Bitte wählen Sie alle zutreffenden Antworten aus:
- Hörbücher/Hörspiele
  - Online Audio- und Videobeiträge (z.B. Podcasts)
  - Videos
  - Serien/Filme
  - Andere Medien:
  - Bücher
  - Zeitschriften
  - eBooks
  - Hörbücher/Hörspiele
  - Online Audio- und Videobeiträge (z.B. Podcasts)
  - Videos
  - Spiele
  - Andere Medien:
  - nicht zutreffend (wenn Sie Ihrem Kind nicht regelmäßig vorlesen)
17. In welchem Kontext sind Bücher Teil Ihrer regulären Routinen mit Ihrem Kind?
- Morgendliche Routine
  - Spieleinheiten
  - Gute-Nacht-Geschichten
  - Anderer Kontext:
  - Bücher sind nicht Teil unserer regulären Routinen
18. Wie viele Kinderbücher besitzen Sie? Bitte schätzen Sie die Anzahl:



19. Besitzen Sie zweisprachige/mehrsprachige Kinderbücher? Falls ja, wie viele?  Ja: \_\_\_\_\_  
 Nein
20. **An wie vielen Tagen lesen Sie oder ein**  7 Tage pro Woche  
anderes Mitglied Ihres Haushaltes Ihrem Kind  5-6 Tage pro Woche  
in einer regulären Woche **vor?**  3-4 Tage pro Woche  
 1-2 Tage pro Woche  
 0 Tage pro Woche
21. **In welcher Sprache lesen Sie Ihrem Kind in**  
der Regel vor?
22. **Wer liest** Ihrem Kind regelmäßig **vor?**  Eltern  
 Großeltern  
 Geschwister  
 Andere:
23. **An wie vielen Tagen hören Sie oder ein**  7 Tage pro Woche  
anderes Mitglied Ihres Haushaltes in einer  5-6 Tage pro Woche  
regulären Woche **Hörspiele** mit Ihrem Kind  3-4 Tage pro Woche  
an?  1-2 Tage pro Woche  
 0 Tage pro Woche
24. **Wer** hört sich regelmäßig **Hörspiele** mit  Eltern  
Ihrem Kind an?  Großeltern  
 Geschwister  
 Andere:
25. **In welcher Sprache** sind die **Hörspiele**, die  
Sie mit Ihrem Kind anhören, in der Regel  
verfasst?

26. Wenn Sie zusammen mit Ihrem Kind ein Buch anschauen, wie setzen Sie sich mit dem Inhalt auseinander? Bitte wählen Sie alle zutreffenden Antworten aus:
- Lautes Vorlesen des Textes
  - Den Text in eigenen Worten zusammenfassen
  - Innehalten, um Fragen zu stellen
  - Während des Lesens auf Bilder im Buch zeigen
  - Innehalten, um Wörter zu erklären
  - Die Geschichte (vor-)spielen
  - nicht zutreffend (falls Sie nicht regelmäßig mit Ihrem Kind Bücher anschauen)
27. Bitte schätzen Sie, **wie oft** Ihr Kind durchschnittlich den Wunsch äußert eine **Geschichte erzählt** zu bekommen.
- Sehr oft (Täglich)
  - Oft (Jeden zweiten Tag)
  - Manchmal (Wöchentlich)
  - Selten (Monatlich)
  - Nie
28. Bitte schätzen Sie **wie oft** Ihr Kind durchschnittlich den Wunsch äußert ein **Buch vorgelesen** zu bekommen.
- Sehr oft (Täglich)
  - Oft (Jeden zweiten Tag)
  - Manchmal (Wöchentlich)
  - Selten (Monatlich)
  - Nie
29. Bitte schätzen Sie **wie oft** Ihr Kind durchschnittlich den Wunsch äußert ein **Hörbuch anzuhören**.
- Sehr oft (Täglich)
  - Oft (Jeden zweiten Tag)
  - Manchmal (Wöchentlich)
  - Selten (Monatlich)

Nie

30. Falls Sie bereit wären an einem kurzen

Online-Interview teilzunehmen, das an diesen

Fragebogen anschließt, geben Sie bitte hier

Ihre Emailadresse an:

*Note.* Questions were adapted from Chow and Cummins (2003), Gonzalez-Barrero et al. (2021), Hood et al. (2008), Marian et al. (2007), Sénéchal et al. (1998) and amended by additional questions.

## Appendix E

### Survey (Germany Version – Turkish)

Bu anketi tamamlamaya gönüllü olduğunuz için teşekkür ederiz. Çocuğunuzla konuştuğunuz diller ve çocuğunuzla okuryazarlıkla yaptığımız etkinlikler hakkında birkaç soruyu yanıtlamanızı isteyeceğiz. Bu anket üç bölümden oluşmaktadır ve tamamlanması yaklaşık 15-30 dakika sürecektir.

Bu anketin ilk bölümü, kendi demografik bilgileriniz (ör. hangi ülkede yaşadığımız) hakkında sorular içerir.

Anketin ikinci bölümü, çocuğunuzun demografik bilgileri (ör. çocuğunuzun yaşı) ile ilgili soruları içerir.

Anketin üçüncü bölümü, çocuğunuzla düzenli olarak hangi aktiviteleri yaptığınıza (örneğin şarkı söylemek, kitap okumak, hikâye anlatmak) ilişkin birkaç soru soracaktır.

Bir sonraki sayfada anketle ilgili daha fazla ayrıntı bir onay formu şeklinde sağlanacaktır. Onay formunun ardından anket başlayacaktır.

#### Lütfen öncelikle aşağıdaki soruları cevaplandırınız:

1. Sorulara cevap verdiğiniz çocukla ilişkiniz nedir?  Anne  
 Baba  
 Diğer:
2. Çocuğunuz kaç yaşında? Lütfen yaşını doğrulayınız (aa/yy):
3. Çocuğunuz birinci sınıfa başladı mı?  Evet  
 Hayır

#### Bölüm 1

#### Lütfen kendiniz için aşağıdaki demografik bilgileri doldurunuz:

1. Kaç yaşındasınız? \_\_\_\_\_ yıl

2. Hangi ülkede yaşıyorsunuz?

3. Hangi ülkede doğdunuz?

4. Lütfen etnik kökeninizi/kökenlerinizi

belirtiniz.

\_\_\_\_\_

Belirtmemeyi tercih ederim.

(Örneğin: İtalyan, Alman, Polonyalı, Türk):

5. Tamamlamış olduğunuz en yüksek eğitim

derecesi nedir?

9. Sınıf

10. Sınıf

Lise

Üniversite

Yüksek Lisans

Doktora

Diğer

6. Mesleğiniz nedir?

7. Evinizde kaç kişi yaşıyor?

(kendiniz dahil)?

\_\_\_\_ yetişkin

\_\_\_\_ çocuk

8. Lütfen tahmini yıllık gelirinizi belirtin:

€15,000'dan az

€15,001–€30,000

€30,001-€50,000

€50,001-€70,000

€70,001'dan daha fazla

9. İlk öğrendiğiniz dil nedir? (Doğumdan itibaren

aynı anda birden fazla dile maruz kaldıysanız,

lütfen tüm dilleri listeleyiniz.)

10. Başka hangi dilleri konuşabiliyorsunuz?

Lütfen konuştuğunuz diğer tüm dilleri

Dil:

Yeterlilik:

listeleyin ve yeterliliğinizi (=dili ne kadar iyi konuştuğunuzu ve anladığınızı) 1 (=düşük yeterlilik) ile 5 (=yüksek yeterlilik) arasında derecelendirin:

- 1 (kötü)
- 2 (fena değil)
- 3 (orta derece)
- 4 (iyi)
- 5 (son derece iyi)

Dil:

Yeterlilik:

- 1 (kötü)
- 2 (fena değil)
- 3 (orta derece)
- 4 (iyi)
- 5 (son derece iyi)

11. Diğer hane halkı üyeleriyle en çok hangi dil(ler)i konuşuyorsunuz?

12. Çocuğunuzla düzenli olarak hangi dil(ler)i konuşuyorsunuz?

13. Çocuğunuzla hangi dil(ler)i konuşmayı tercih ediyorsunuz?

14. Partneriniz çocuğunuzla hangi dil(ler)i konuşuyor?

\_\_\_\_\_

Partnerim yok.

## Bölüm 2

**Lütfen çocuğunuzla ilgili demografik bilgilerini doldurunuz:**

1. Çocuğunuza resmi olarak otizm spektrum

bozukluğu tanısı koyulduğunda kaç

\_\_\_\_\_ yıl \_\_\_\_\_ ay

yaşındaydı?

2. Teşhisi kim koydu?

3. Lütfen çocuğunuzun sahip olabileceği ek

Ek Teşhisler:

(birlikte ortaya çıkan) tanıları (örneğin, DEHB)

Çocuğumun ek teşhisi yok

belirtin:

4. Çocuğunuzun ilk dili nedir (çocuğunuzun

maruz kaldığı ilk dil)? (Çocuğunuz doğumdan

itibaren birden fazla dile maruz kaldıysa, lütfen

tüm dilleri listeleyiniz.)

5. Çocuğunuz en sık hangi dili/dilleri kullanıyor?

6. Çocuğunuzun hangi dili/dilleri en iyi

anladığını düşünüyorsunuz?

7. Lütfen çocuğunuzun maruz kaldığı tüm dilleri Dil:

listeleyin ve çocuğın dile en çok maruz kaldığı

Ev

ortamı (örn. ev, okul) belirtiniz:

Okul

Diğer

Dil:

Ev

Okul

Diğer

8. Lütfen çocuğunuzun her bir dile ilk kez maruz kaldığı yaşı belirtiniz:

Dil			
İlk maruz kalma yaşı	<input type="checkbox"/> 12 aydan önce <input type="checkbox"/> 12-24 ay <input type="checkbox"/> 25-36 ay <input type="checkbox"/> 36 aydan sonra	<input type="checkbox"/> 12 aydan önce <input type="checkbox"/> 12-24 ay <input type="checkbox"/> 25-36 ay <input type="checkbox"/> 36 aydan sonra	<input type="checkbox"/> 12 aydan önce <input type="checkbox"/> 12-24 ay <input type="checkbox"/> 25-36 ay <input type="checkbox"/> 36 aydan sonra

9. Lütfen çocuğunuzun şu anda ortalama bir günde, her bir dile ne kadar süre maruz

kaldığını tahmin edin:

Dil			
Mevcut günlük maruz kalma yüzdesi	<input type="checkbox"/> 0 saat <input type="checkbox"/> 1-3 saat <input type="checkbox"/> 4-6 saat <input type="checkbox"/> 7-9 saat <input type="checkbox"/> 10 saat ve üzeri	<input type="checkbox"/> 0 saat <input type="checkbox"/> 1-3 saat <input type="checkbox"/> 4-6 saat <input type="checkbox"/> 7-9 saat <input type="checkbox"/> 10 saat ve üzeri	<input type="checkbox"/> 0 saat <input type="checkbox"/> 1-3 saat <input type="checkbox"/> 4-6 saat <input type="checkbox"/> 7-9 saat <input type="checkbox"/> 10 saat ve üzeri

10. Lütfen çocuğunuzun mevcut iletişim düzeyini  Tek kelimeler

belirtin:

2 kelimelik ifadeler

3 kelimelik ifadeler

Basit cümleler

Bileşik cümleler

11. Çocuğunuz iletişim kurmak için arttırıcı ve alternatif bir iletişim cihazı (örneğin bir tablet, PECS) kullanıyor mu?

Evet

Hayır

12. Çocuğunuz, arttırıcı ve alternatif bir iletişim cihazı kullanıyorsa, AAC cihazı hangi dil(ler)dedir?

13. Çocuğunuz iletişim kurmak için işaret dili kullanıyor mu?

Evet

Hayır

14. Çocuğunuz resimleri iletişim kurmak için kullanıyor mu?

Evet

Hayır

### Bölüm 3

Lütfen soruları cevaplandırınız:



1. Yandaki seçeneklerden hangisi çocuğunuzla düzenli olarak yaptığınız etkinliklerdendir? Lütfen geçerli olabilecek tüm seçenekleri seçin:
- Şarkı Söylemek  
 Tekerlemeler  
 Yapboz  
 Hikaye anlatımı  
 Masa/Kart oyunları (örneğin, hafıza oyunu)  
 Diğer
2. Normal bir haftada, siz veya başka bir ev üyesi, çocuğunuza ne sıklıkla hikaye (örneğin: fabl, eğitici, uyku masalı,dini hikayeler,hayalet hikayeleri) anlatırsınız (resimli veya resimsiz olabilir)?
- Haftada 7 gün  
 Haftada 5-6 gün  
 Haftada 3-4 gün  
 Haftada 1-2 gün  
 Haftada 0 gün
3. Çocuğunuza genellikle hangi dilde/dillerde hikayeler anlatırsınız?
4. Çocuğunuza düzenli olarak kim hikayeler anlatır? Lütfen geçerli olanların tümünü işaretleyiniz:
- Ebeveynler  
 Dede ve Nine  
 Kardeşler  
 Diğer:
5. Normal bir haftada, siz veya başka bir ev üyesi, çocuğunuza/onunla birlikte **ne sıklıkla şarkı söylersiniz?**
- Haftada 7 gün  
 Haftada 5-6 gün  
 Haftada 3-4 gün  
 Haftada 1-2 gün  
 Haftada 0 gün
6. Çocuğunuza/onunla birlikte genellikle **hangi dilde/dillerde şarkı söylersiniz?**

7. **Kim** çocuđunuza dzenli olarak **şarkı söyler**?  Ebeveynler  
 Dede ve Nine  
 Kardeşler  
 Diğer:
8. Normal bir haftada, siz veya başka bir ev üyesi, çocuđunuzla **ne sıklıkta tekerlemeler söylersiniz**?  Haftada 7 gün  
 Haftada 5-6 gün  
 Haftada 3-4 gün  
 Haftada 1-2 gün  
 Haftada 0 gün
9. Çocuđunuzla genellikle **hangi dil(ler)de tekerlemeler** söylersiniz?
10. Çocuđunuza **kim** dzenli olarak **tekerlemeler** söyler?  Ebeveynler  
 Dede ve Nine  
 Kardeşler  
 Diğer:
11. Normal bir haftada, siz veya başka bir ev üyesi, çocuđunuzla ne sıklıkla yapboz yaparsınız?  Haftada 7 gün  
 Haftada 5-6 gün  
 Haftada 3-4 gün  
 Haftada 1-2 gün  
 Haftada 0 gün
12. Çocuđunuzla **kim** dzenli olarak **yapboz** yapar?  Ebeveynler  
 Dede ve Nine  
 Kardeşler  
 Diğer:

13. Normal bir haftada, siz veya başka bir ev üyesi, çocuğunuzla **ne sıklıkla masa/kart oyunları oynarsınız** (örn. hafıza oyunları)?
- Haftada 7 gün
  - Haftada 5-6 gün
  - Haftada 3-4 gün
  - Haftada 1-2 gün
  - Haftada 0 gün
14. Çocuğunuzla düzenli olarak **kim masa/kart oyunları oynar?**
- Ebeveynler
  - Dede ve Nine
  - Kardeşler
  - Diğer:
15. Çocuğunuzla rutinlerinizde düzenli olarak hangi medyayı kullanıyorsunuz? Lütfen geçerli olabilecek tüm seçenekleri seçin:
- Kitaplar
  - Dergiler
  - E-kitaplar
  - Sesli kitaplar
  - Podcastler
  - Videolar
  - TV şovları/ Filmler
  - Diğer:
16. Çocuğunuzla kitap okumaya nasıl katılıyorsunuz? Lütfen geçerli olabilecek tüm seçenekleri seçin:
- Kitaplar
  - Dergiler
  - E-kitaplar
  - Sesli kitaplar
  - Podcastler
  - Kitap videoları
  - Oyunlar
  - Diğer:

17. Kitaplar günlük rutininizin hangi parçasını içerir?
- Eğer düzenli olarak çocuğunuza okumuyorsanız işaretleyiniz.
- Sabah rutini
- Oyun zamanı
- Yatmadan Önce
- Diğer:
- Kitaplar günlük rutininizin bir parçası değil
18. Evinizde kaç tane çocuk kitabı var? Lütfen bir tahminde bulunun:
19. Evinizde çift dilli çocuk kitabı var mı? Eğer varsa, kaç tane?
- Evet: \_\_\_\_\_
- Hayır
20. Normal bir haftada, siz veya başka bir ev üyesi çocuğunuza ne sıklıkla kitap okursunuz?
- Haftada 7 gün
- Haftada 5-6 gün
- Haftada 3-4 gün
- Haftada 1-2 gün
- Haftada 0 gün
21. Çocuğunuza genellikle hangi **dilde/dillerde** kitap okursunuz?
22. **Kim** çocuğunuza düzenli olarak **kitap okur**?
- Ebeveynler
- Dede ve Nine
- Kardeşler
- Diğer:
23. Normal bir haftada, siz veya başka bir ev üyesi, **ne sıklıkla** çocuğunuzla **sesli kitap**
- Haftada 7 gün
- Haftada 5-6 gün

- (veya bir hikayenin başka bir işitsel kaydı)  Haftada 3-4 gün
- dinliyorsunuz?  Haftada 1-2 gün
- Haftada 0 gün
24. Çocuğunuzla birlikte **kim** düzenli olarak **sesli**  Ebeveynler
- kitap** dinliyor?  Dede ve Nine
- Kardeşler
- Diğer:
25. Çocuğunuzla birlikte dinlediğınız **sesli**
- kitaplar, hangi dil(ler)dedir?**
26. Siz ve çocuğunuz birlikte bir kitaba bakarken  Metni yüksek sesle okurum.
- ne yaparsınız? Lütfen uygun olanların tümünü  İçeriği kendi kelimelerimle
- seçin:  özetlerim.
- Duraklayıp, soru sorarım.
- Okurken çizimlere dikkat çekerim.
- Duraklayıp, kelimeleri açıklarım.
- Hikayeyi canlandırırım.
- Eğer çocuğunuzla düzenli olarak
- kitaplara bakmıyorsanız işaretleyiniz.
27. Çocuğunuz ortalama olarak, **ne sıklıkla**  Her zaman (Her gün)
- hikaye anlatılmasını ister?**  Sıklıkla (Gün aşırı)
- Bazen (Haftada bir)
- Nadiren (Ayda bir)
- Asla
28. Çocuğunuz ortalama olarak, **ne sıklıkla**  Her zaman (Her gün)
- kendisine **kitap okunmasını istiyor?**  Sıklıkla (Gün aşırı)

29. Çocuğunuz ortalama olarak, **ne sıklıkla sesli kitap** (veya bir hikayenin başka bir işitsel kaydını) **dinlemeyi** talep ediyor?
- Bazen (Haftada bir)
- Nadiren (Ayda bir)
- Asla
- Her zaman (Her gün)
- Sıklıkla (Gün aşırı)
- Bazen (Haftada bir)
- Nadiren (Ayda bir)
- Asla

30. Bir sonraki görüşme için sizinle iletişime geçilmesini istiyorsanız, lütfen e-posta adresinizi buraya girin:

*Note.* Questions were adapted from Chow and Cummins (2003), Gonzalez-Barrero et al. (2021), Hood et al. (2008), Marian et al. (2007), Sénéchal et al. (1998) and amended by additional questions.

## Appendix F

### Interview Questions (English)

1. Can you tell me what a typical day looks like for you and your child?
2. Can you tell me about your family's home language environment?
3. How important is it to you that your child speaks both/ all your family's languages?

Possible follow-up questions:

3.1 How important is it to you that your child learns to read and write in both/all your family's languages?

4. Can you tell me what has influenced your decision regarding the languages you speak with your child?
5. Have you made any changes to the languages you speak with your child after your child was diagnosed with autism? If so, what have you changed?

Possible follow-up questions:

5.1 Have you ever received guidance on whether you should speak one language or all your family's languages with your child?

5.2 If yes, who gave you this advice?

5.3 Did you receive this advice before or after your child was diagnosed with autism?

6. Please tell me about the daily routines you have with your child as they concern reading and storytelling. What are activities that you frequently do?

Possible follow-up questions:

6.1 Do you own any bilingual books?

6.2 If not, are you aware that bilingual children's books are available in your family's languages?

7. Is there a particular language that you use when you read to your child or tell your child a story, or do you frequently switch between languages?

Follow-up question:

- 7.1 Do you think switching between languages/keeping a consistent language is helpful to your child?
8. Do you ever translate words into another language than the language the book was written in when reading to your child?
9. Do you ever discuss the story of a book in another language than the language the book was written in when reading to your child?
10. Have you ever received any intervention or professional advice to facilitate literacy experiences for your child?

Possible follow-up questions:

10.1 If yes, ...

- What strategy did this intervention consist of?
- Did this intervention fit into your usual routines?
- What language was this intervention provided in?
- Would you have preferred the intervention to be provided in a different language?
- Did you receive any guidance on how to adapt the intervention in another language?

10.2 If not, ...

- Would you be interested in receiving professional support in providing literacy experiences for your child?
- What language would you like this support to be provided in?



## Appendix G

### Interview Questions (German)

1. Können Sie mir sagen wie ein typischer Tag für Sie und Ihr Kind aussieht?
2. Können Sie mir das sprachliche Umfeld beschreiben, in dem Ihr Kind aufwächst?
3. Wie wichtig ist es für Sie, dass Ihr Kind lernt beide/alle Sprachen Ihrer Familie zu sprechen?

Mögliche Folgefragen:

- a. Wie wichtig ist es für Sie, dass Ihr Kind lernt in beiden Sprachen Ihrer Familie zu schreiben und zu lesen?
4. Können Sie mir sagen, was Ihre Entscheidung beeinflusst hat welche Sprache(n) Sie mit Ihrem Kind sprechen?
5. Haben Sie nach der Diagnose Ihres Kindes irgendwelche Änderungen in den Sprachen, die Sie mit Ihrem Kind sprechen, vorgenommen? Falls ja, was haben Sie verändert?

Mögliche Folgefragen:

- a. Wurden Sie jemals beraten, ob Sie eine oder mehrere Sprachen mit Ihrem Kind sprechen sollen?
- b. Falls ja, von wem wurden Sie beraten?
- c. Haben Sie diesen Rat bevor oder nachdem die Diagnose Autismus bei Ihrem Kind gestellt wurde erhalten?
6. Bitte erzählen Sie mir von Ihren täglichen Routinen mit ihrem Kind, die Lesen, Geschichtenerzählen und andere Schriftsprachaktivitäten beinhalten. Was sind Ihre Routinen?

Mögliche Folgefragen:

- a. Besitzen Sie mehrsprachige Kinderbücher?

- b. Falls nicht, ist Ihnen bekannt, dass es mehrsprachige Kinderbücher in den Sprachen Ihrer Familie gibt?
7. Wenn Sie Ihrem Kind vorlesen oder eine Geschichte erzählen nutzen Sie in der Regel eine Sprache oder wechseln sie zwischen mehreren Sprachen?

Mögliche Folgefragen:

- a. Denken Sie, dass es hilfreich für Ihr Kind ist, dass Sie bei einer Sprache bleiben/ zwischen mehreren Sprachen wechseln?
8. Übersetzen Sie, wenn Sie Ihrem Kind vorlesen Wörter aus dem Buch in eine andere Sprache, als die Sprache in der das Buch geschrieben ist?
9. Sprechen Sie mit Ihrem Kind jemals über den Inhalt eines Buches in einer anderen Sprache, als die Sprache in der das Buch geschrieben ist?
10. Haben Sie jemals professionelle Beratung erhalten wie sie den Schriftspracherwerb Ihres Kindes unterstützen können?

Mögliche Folgefragen:

- a. Falls ja, ...
- Was für Strategien wurden Ihnen im Rahmen dieser Beratung erklärt?
  - Passen die Strategien, die Ihnen erklärt wurden, in Ihre regulären Routinen?
  - In welcher Sprache wurde Ihnen diese Beratung zur Verfügung gestellt?
  - Hätten Sie es bevorzugt, wenn die Beratung in einer anderen Sprache bereitgestellt worden wäre?
  - Wurden Sie beraten, wie Sie die Strategien in einer anderen Sprache anpassen könnten?
- b. Falls nicht, ...

- Hätten Sie Interesse daran professionelle Beratung zu erhalten, wie sie den Schriftspracherwerb Ihres Kindes unterstützen können?
- In welcher Sprache würden Sie diese Beratung am liebsten erhalten?



# VITA

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- 2016 *First State Examination Special Education*, Ludwig-Maximilians University, Munich, Germany

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- 2020 – 2023 *Graduate Research and Teaching Assistant*, The Pennsylvania State University
- 2020 *Special Education Teacher*, Janusz-Korczak-School, Penzberg, Germany
- 2019 – 2020 *German Teacher*, Vancouver Westside German School, Vancouver, Canada
- 2019 – 2020 *Education Assistant*, Hollyburn Elementary, West Vancouver Schools, West Vancouver Canada
- 2017 – 2019 *Trainee Teacher*, Prälat-Michael-Thaller School, Abensberg, Germany
- 2017 *German Teacher*, Internationella Engelska Skolan, Huskvarna, Sweden
- 2016 *Early Childhood Educator*, Denk mit!, Tutzing, Germany

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