

## Language Mixings in Heritage Language Education: A Systematic Review

Yizhe Jiang

The Ohio State University, US

[jiang.1878@osu.edu](mailto:jiang.1878@osu.edu)

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<p><b>Received:</b> 30/04/2021</p> <hr/> <p><b>Accepted:</b> 15/06/2021</p> <hr/> <p><b>Keywords:</b> systematic review, language mixing, translanguaging, heritage language education, research trends</p>	<p style="text-align: center;"><i>Abstract</i></p> <p><i>The overarching research question for this paper is what work has been done on heritage languages worldwide through a language mixing lens. Given the increasing research interest in this topic and the scarcity of previous secondary studies, a systematic review was conducted on the empirical data at the intersection of language mixing and heritage language education, in and out of schools. Thematic analysis and frequency analysis were carried out on qualified empirical sources gathered from Scopus, Web of Science, and Linguistics and Language Behavior Abstracts (LLBA). After sharing backgrounds on heritage language education and language mixing with relative terms and perspectives, the paper presents findings from the review based on 23 peer-reviewed empirical journal articles, focusing specifically on three aspects: (a) the main theoretical approaches and definitions employed for language mixing; (b) the characterization of language mixing for instruction and its impacts on heritage language education; (c) the parent and community language mixing activities for children's heritage language learning. The limitations of the existing studies and the implications for educators and researchers are later discussed. It is hoped that this article will further our knowledge on this topic and provide pointed implications for future education and research.</i></p>
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### 1. INTRODUCTION

Heritage language, also known as “mother tongue”, “native language”, “home language”, “community language”, and “first language”, is a relatively new area in language education for minorities which has blossomed from Fishman’s work in 1964. From a sociocultural perspective, heritage language plays an important role in the learners’ identity construction (He, 2010; Leeman, 2005). Scholars have also found that the improvement of heritage language competence can cement the speakers’ bonds with family and co-ethnic groups, and finally leads to the betterment of our society (Cho, 2000). Hence, heritage language learning programs, formal and informal, are on the rise aiming to facilitate the wellbeing of the minority language speakers and encourage linguistic and cultural diversity around the globe. In the past few decades, we have witnessed a growing body of studies on heritage language acquisition in educational settings (e.g., Beaudrie, 2011; Kondo-Brown, 2003). Not like elite and elective bilinguals with limited authentic resources of second or foreign languages beyond the classroom, heritage language speakers generally pick up their mother tongues in the family and community without formal instruction. Thus, family and community involvement in heritage language acquisition is also worthy of investigation. It is approved that heritage learners’ language competence is affected by parental attitudes (Tse, 2001), birth order (Li, 2008), community supports (Oriyama, 2010), and so forth.

As language mixing has gained currency in recent years, there has been an increasing interest in the roles of language mixing in heritage language acquisition. Many researchers claim that language mixing efforts are beneficial to students' higher-order thinking (Stewart & Hansen-Thomas, 2016), literacy development (Machado & Hartman, 2009), as well as social integration (Gutiérrez, Baquedano-López, & Tejeda, 1999). To capture the research trends and generate implications for future research and practices, a systematic review was conducted on 23 empirical research journal articles focusing on language mixing efforts for heritage language learning in and out of instructional settings.

## **2. REVIEW OF LITERATURE**

### **2.1 Heritage Language Education**

Valdés defines heritage languages as “nonsocietal and nonmajority languages spoken by groups often known as linguistic minorities” (2005, p. 411). Based on this definition, heritage language students refer to “those members of linguistic minorities who are concerned about the study, maintenance, and revitalization of their minority languages” (Valdés, 2005, p. 411). According to Fishman (2001), in the American context, heritage language maintenance refers to the preservation and revitalization of an indigenous (e.g., Zuni, Cherokee), an immigrant (e.g., Indonesian, Korean), or a colonial language (e.g., German, French). This paper expands the scope of Fishman's classification of heritage languages from the State to the globe and seeks to investigate what work has been done on heritage languages worldwide, either popular or endangered, through a language mixing lens.

Due to the caretakers' mixed perceptions toward the minority languages and various expectations on their children's future careers, researchers have documented different language policies in the home milieu. An oft-cited scholar in this area is Guofang Li who has conducted a multi-case study on Chinese-Canadian children's home language environments (2006). In this study (Li, 2006), a father embraces his daughter's potential in both English and Mandarin, encouraging her to flexibly mix the two languages, whereas a mother shows a negative attitude towards the mixture of English and Cantonese and only speaks in English with her son. In addition, parents usually draw on multiple linguistic and cultural resources to boost the learners' motivation including songs, books, and movies, to name only a few. However, in the past, most of the studies on family language rules were aimed at students' bilingualism or dominant language capacities to facilitate their engagement into the mainstream culture without clear emphasis on their heritage language maintenance. It is until recently that remarkable attention has been paid to parental involvement in heritage language maintenance.

Beyond families, many communities provide stages in various forms for minority children to learn their heritage languages and cultures, such as the celebrations of Chinese Spring Festival and Italian American Museum in New York City. In the past few years, aware of the erosion of the heritage languages impacted by powerful lingua francas, many minority communities have set up weekend complementary schools providing heritage language instructions. Moreover, some daily schools offer bilingual or heritage language programs for indigenous and immigrant children. The differences in learning processes and resources between second/foreign language learners and heritage language learners beckon us to be attentive to the theories adopted by heritage language researchers and educators. Language mixing, which has garnered our increasing attention recently, has been more and more widely applied to heritage language education. In the following section, the theories of language mixing with multiple perspectives and the discussions on language mixing in and out of school are provided.

## **2.2 Language Mixings in Households, Communities, and Classrooms**

Various terms have been used for the language mixing ideologies and practices. At first, language was generally viewed as “bound systems and fixed codes” (Gort&Semiante, 2015) resonating with traditional perspectives of second language acquisition. Guided by this view towards language, code-switching has usually been viewed as “the kind of discourse in which words originating in two different language systems are used side-by-side” (Backus, 2005, p. 307). Within the last few years, the perceptions of many researchers toward the nature of language have been changed from fixed to fluid, underpinning many emerging terms such as flexible bilingualism, hybrid language use, translanguaging, and translingual, and translinguaging which is the most noteworthy among them. “Flexible bilingualism” defined by Blackledge & Creese focuses on individual agency instead of separate, discrete and bounded languages (2010). According to Gutiérrez, Baquedano-López, and Alvarez (2001), “Hybrid language use is more than simple code-switching as the alternation between two codes. It is more a systematic, strategic, affiliative and sense-making process” (p. 128). With permeable language boundaries, translinguaging is defined as:

a process by which students and teachers engage in complex discursive practices that include ALL the language practices of ALL students in a class in order to develop new language practices and sustain old ones, communicate and appropriate knowledge, and give voice to new sociopolitical realities by interrogating linguistic inequality (García & Kano, 2014, p. 261)

Considering multilingual composing, Canagarajah (2011) explains that translanguaging research with a product-oriented perspective is more encouraged since the translinguaging process is too complicated and subtle to capture. The application of this perspective into composing instruction is often accompanied by multimodalities. For example, Childs invited the students and teachers to discuss humanizing pedagogy using photos and poems with flexible language choices (2016).

In the bilingual home milieu, the linguistic features of language mixing are reported by scholars to a great extent. For instance, Ng and He (2004) studied the structural form of code-switching between English and Chinese based on a 30,000-word corpus of conversations in four tri-generational Chinese families in New Zealand and have found that between-turns code-switching happened more frequently than within-turns code-switching. This is in alignment with the prevalent linguistic analyses of language mixing in bilingual speech such as the investigation of Quebec French code-switchers’ usage of phrase-final prepositions by Poplack, Zentz, and Dion (2012). A lesser-known aspect of language mixing, however, is how it influences language acquisition especially for the heritage languages.

Studies on how communities integrate and leverage local semiotic repertoires are few when compared to those conducted with household language mixings. What is more, communities are tightly associated with families and schools in language mixing research. For example, Kim, Dorner, and Song (2021) in the U.S. investigated a community language mixing project for students at a Spanish immersion elementary school and their families to make storybooks. In this work, they put forward a concept “community translinguaging” as meaning-making process and product of the collaboration among children, family, and community, leveraging their linguistic and cultural resources. From the study, the researchers claim that the community translinguaging practices promote students’ multiliteracy development through the concerted efforts of family, community, and school. Likewise, studies on community language mixing efforts are rarely aimed at heritage language education. Therefore, the author took a closer look at primary studies on heritage language learning in family and community through a language mixing lens in this systematic review.

Many scholars discuss the affordances of language mixing as pedagogy. Creese and Blackledge (2010) point out that such pedagogy is aimed at sustaining minority students’ dynamic language through meaningful learning. Sayer (2008) shows that beyond the

boundary between English and Spanish, language mixing in pedagogy makes contributions to Latino students' construction of confident ethnolinguistic identity. With the term "translanguaging as pedagogy", García and Li (2014) suggest that language mixing pedagogy encourages students to investigate social justice and question the social hierarchies with a sociocritical approach.

According to Cenoz and Gorter (2017), there are two types of language mixing efforts in pedagogy: pedagogical translanguaging and spontaneous translanguaging. On the one hand, "pedagogical translanguaging" is "planned by the teacher inside the classroom and can refer to the use of different languages for input and output or to other planned strategies based on the use of students' resources from the whole linguistic repertoire" (p. 194). On the other hand, spontaneous translanguaging, the unplanned language mixing practice, also plays an important role in heritage language classrooms (Cenoz & Gorter, 2017). In the finding section of this paper, the language mixing pedagogy documented by the selected studies is arranged within these two categories.

### **2.3 Former Reviews and the Current Study**

To the best knowledge of the author, in spite of the relatively rich research carried on pedagogical translanguaging in academic content subjects like science, math, and social studies, the effects of this kind of pedagogy in heritage language classes remain seldom-explored, let alone the systematic review on this topic. Furthermore, there is no systematic review on community and parent involvement in children's heritage language maintenance through a language mixing lens. To address the research gaps, this article presents a systematic review conducted in 2020 covering empirical peer-reviewed journal articles of studies on heritage language education based on a language mixing lens. This article is aimed to further our knowledge in this area and provide implications for future education and research.

Specifically, this review aims to address the following questions:

1. What are the main theoretical approaches and definitions of language mixing **studies used by scholars in heritage language education contexts?**
2. How is language mixing pedagogy characterized in heritage language instruction? How have researchers examined its effectiveness?
3. What factors or roles have researchers identified for language mixing outside of formal instruction?

### **3. RESEARCH METHODOLOGY**

In this section, the process of data collection and analysis is presented, namely how the primary resources were identified and analyzed. Guided by the research questions, a systematic review was conducted to investigate the role of language mixing activities in heritage language learning in family, community, and school). systematic reviews are:

literature reviews adhere closely to a set of scientific methods that explicitly aim to limit systematic error (bias), mainly by attempting to identify, appraise and synthesize all relevant studies (of whatever design) in order to answer a particular question (or set of questions). (Petticrew & Roberts, 2012, p. 9)

Petticrew and Roberts state that this kind of review is valuable when there is a need to answer a set of questions and further provide implications for research and practices in a certain area (2012).

#### **3.1 Data Collection**

In order to identify qualified empirical studies and capture the latest research trends, three main databases were employed: Scopus, Web of Science, and Linguistics and Language Behavior Abstracts (LLBA). For quick detection of qualified papers among hundreds of millions of resources, the combination of two sets of keywords was used on these databases: (1) language mixing keywords including “translanguaging”, “code-switching”, “code-mixing”, and “language mixing” and (2) heritage language keywords which are “heritage language”, “mother tongue”, as well as “native language”. According to the research questions, the author set the following inclusion criteria: (1) published with full-text on peer-reviewed journals for relatively higher quality; (2) written in English due to the richer data in English and the author’s personal language repertoire; (3) primary studies centering on heritage language learning with language mixing activities; (4) teachers’ pedagogical translanguaging efforts are studied in real heritage language education settings, which means the content subject is heritage language per se; (5) the language mixing activities in families and communities are aimed at heritage language development. Since there are not many empirical research articles on this topic, no time limitation is involved for studies.

In line with the above inclusion criteria, sources involving the following criteria were excluded: (1) secondary studies focusing on previous literature; (2) academic publications other than peer-reviewed journal articles, including non-peer-reviewed journal article, books, book chapters, proposals; (3) articles not written in English; (4) pedagogical translanguaging mainly aimed at teaching academic subjects rather than heritage language, such as translanguaging teaching activities in a science class; (5) language mixings in families and communities targeting at the development of the dominant language or bilingualism; (6) studies focusing on the linguistic analysis of the language mixings; (7) language mixings in the virtual world.

To identify the appropriate studies, two main rounds of selection were carried out with the inclusion and exclusion criteria. At first, the author searched with the aforementioned keywords on the three databases and found 98 empirical articles with various foci. Second, after reading the abstracts or full texts of these articles, 75 articles were removed. As a result, 23 empirical articles meet the inclusion criteria and were analyzed for this systematic review, including 17 articles in the educational settings (including heritage language classes at daily schools, heritage language weekend schools and after-schools, heritage language workshops, and heritage language tutoring sessions) and 6 articles for family and community. It has to be pointed out that there are only 22 studies involved in this review. Because Vijayakumar, Steinkrauss, and Sun’s article (2020) is a close re-examination of the Tamil classes reported by Sun et al. (2020) who investigated 20 teachers’ translanguaging behaviors in Mandarin, Malay, and Tamil heritage language classes in Singapore. Additionally, the books investigated by Kelly (2020) are used by schools, families, and libraries and they are categorized as language mixing materials in educational settings.

### **3.2 Data Analysis**

Thematic analysis and frequency analysis were employed to provide better insights into the characteristics of the pedagogical translanguaging and its effects on heritage language development. NVivo 12 was used to organize the primary sources with clarity and efficiency. First, after skimming the selected articles, general codes were generated. Second, based on the general codes in the first step, a list of possible themes for the three research questions was created. Third, the themes and codes were revised after carefully analyzing the related contents in these articles. During this step, the coherence and distinction of the codes were checked. Last, the frequency of each code was examined to report the research trends of language mixing in heritage language settings in terms of ways and its effectiveness.

#### 4. RESULTS

To illustrate the backgrounds of these studies, two tables are provided in this section, respectively created for studies in- and out-of-school settings. The earliest article was published in 2011 by Creese's team indicating that heritage language learning through a language mixing lens is a newly established area. Among the 23 articles, 4 were published in 2019, and 12 were released in 2020. In the future, we will witness an increasing number of studies with various foci in this area. Regarding the countries of the study, English-dominant countries, especially the US with 11 articles (e.g., Menken & Avni, 2017; Rowe, 2019), account for the biggest slice of the cake. Other regions include Singapore (Sun et al., 2020), Zimbabwe (Mazuruse & Mberi, 2012), Sweden (Dávila & Bunar, 2020), Italy (Ghimenton, 2015) and Bolivia (Hornberger & Swinehart, 2015), suggesting the strong need to further our knowledge in contexts where English is not the official language or widely spoken. This may also be attributed to the inclusion criterion of English-written articles for this review. As for the target heritage language, Spanish is the most reported language, followed by Korean. Immigrant languages are dominant in current research such as Chinese varieties in the States (Wu & Leung, 2020) and Tamil in Australia (Perera, 2020). However, only three works deal with the revitalization of indigenous languages including Higgins's (2019), Hornberger and Swinehart's (2012, and Mazuruse and Mberi's (2012). In addition, there is one article presenting the engagement of an Italian family in the maintenance of Veneto dialect (Ghimenton, 2015).

Table 1

*Background Information of the Empirical Studies in Educational Settings*

No.	Article	Heritage Language	Country	Educational Settings
1	Barbour & Quinn (2020)	Multiple languages	UK	A creative writing workshop for third graders
2	Belpoliti & Perez (2019)	Spanish	US	An advanced Spanish class with professional fairs for the Health Professionals course at a university
3	Bonomi (2020)	Spanish	Italy	A weekly extracurricular workshop in a secondary school
4	Creese et al. (2011)	Gujarati, Cantonese, Bengali, Turkish	UK	Four community complementary schools
5	Dávila & Bunar (2020)	Multiple languages	Sweden	In and out of Swedish-medium classroom in urban Swedish schools
6	Hornberger & Swinehart (2012)	Aymara, Quechua	Bolivia	A master program for teaching Aymara and Quechua
7	Kelly (2020)	Spanish	US	Language-mixing books used by teachers, parents, and library
8	Kim & Park (2020)	Korean	US	A one-to-one poetry writing workshop
9	Lee & García (2020)	Korean	US	A Korean heritage language classroom
10	Mazuruse & Mberi (2012)	Shona	Zimbabwe	Tertiary-level Shona language classes
11	Menken & Avni (2017)	Hebrew	US	A dual-language bilingual program in a New York City

12	Perera (2020)	Tamil	Australia	Public Middle school
13	Reznicek-Parrado (2020)	Spanish	US	A Tamil Hindu temple school Tutoring sessions of a Spanish-as-a-heritage-language program at a university
14	Rowe (2019)	Multiple Languages	US	A public elementary school
15	Sun et al. (2020)	Mandarin, Malay, Tamil	Singapore	Heritage language classes at kindergartens
16	Vijayakumar et al. (2020)	Tamil	Singapore	A Tamil language class at a kindergarten
17	Wu & Leung (2020)	Chinese language varieties (Mandarin, Fujianese, Cantonese, Hakka, Teochew)	US	A heritage language class at a K-8 charter school

*Note: Kelly's project (2020) was applied to schools, families, and communities. For convenience, it is listed in Table 1.*

Table 2

*Background Information of the Empirical Studies in the Out-of-School Settings*

No.	Article	Heritage Language	Country	Out-of-School Settings
1	Canagarajah (2012)	Tamil	UK, US, Canada	Tamil Diasporas
2	Ghimenton (2015)	Veneto Dialect	Italy	One Veneto-Italian Family
3	Higgins (2019)	Hawaiian	US	Hawaiian-American families
4	Kwon (2019)	Korean	US	Temporal visits of three Korean-American families to museums in Korea
5	Song (2016)	Korean	US	Korean-American Families
6	Wilson (2020)	French	UK	French-English Families

#### 4.1 Theoretical Approaches and Definitions of Language Mixing

Language mixing is a broad and neutral term defining the processes and the products of using more than one language for meaning-making. Under this umbrella, there are diverse terms (e.g., code-switching, code-meshing, translanguaging, translingual, translanguaging) employed by scholars since they have not reached a consensus on the nature of language. Some empirical works lack clear overarching language mixing terms as they do not touch upon the nature of language in-depth. In Mazuruse & Mberi's project at Great Zimbabwe University (2012), the Shona teachers use "code-switching", "code-mixing" and "borrowing" by resorting to English (p. 2026). Ghimenton's research (2013) involves grandparents' "mixed utterances" of Veneto and Italian (p. 133). Although there has been a shift in the perceptions of language, from separate and settled to fluid and flexible, a few researchers use some language mixing terms interchangeably in their articles as these terms are not divergent on the surface level. For example, the classroom translation activities are described as "translanguaging" or "translingual" in Rowe's research (2019).

Thirteen articles adopt "translanguaging" as the guiding term of language mixing. It came as no surprise since they were published between 2016 to 2020 with translanguaging

burgeoning in language education academia. However, translanguaging has various entailments among these articles. Kelly's article (2020) used a general definition from Lews, Jones and Baker's work (2012) as the "spontaneous, everyday way of making meaning, shaping experiences, and communication by bilinguals" (p. 641). In Barbour and Quinn's report (2020), translanguaging does not only involve code-switching "between languages in alternate clauses or sentences" and code-mixing "between languages within sentences, clauses or even words" (p. 9), but also refer to the fluid cognitive process of language constructing and communicating (Li, 2008, as cited by Barbour & Quinn, 2020). The most frequent definitions of translanguaging applied to these empirical studies came from García's (2009) and Otheguy et al.'s (2015) works, emphasizing the full linguistic repertoires of speakers and deconstructing named languages. In another word, most of the primary sources approach language mixing as a resource, encouraging students and their families to leverage full linguistic repertoires in communication while blurring the boundaries and hierarchies of languages. On the basis of the resource-oriented language mixing theory, researchers designed their studies with theoretical frameworks such as flexible bilingualism (Creese et al. 2011; Hornberger & Swinehart, 2012), flexible language practices (Perera, 2020), translanguaging pedagogy (Barbour & Quinn, 2020), translanguaging and academic literacy (Reznicek-Parrado, 2020) and so forth.

On the other hand, some scholars who are aware of the language boundaries approach language mixing as an instructional strategy and adopt "code-switching" as their theoretical framework. Sun and her team (2020) investigated the roles of teachers' code-switching in students' development of heritage language and cognition, defining code-switching as "an alternation between languages, either within (intra-sentential switching) or between (inter-sentential switching) sentences or utterances" (p. 311). Strategy-orientated language mixing is also reflected in and reflective of Mazuruse and Mberi's study (2012). They regard code-switching as an instrumental teaching strategy to facilitate students' motivation, comprehension, expression, communication, and fault correction (Ogutu, 2006, as cited by Mazuruse&Mberi, 2012).

## **4.2 Language Mixings in Educational Settings**

### **4.2.1 Language Mixings as a Pedagogy**

The educational contexts reported by the empirical data vary from early childhood (e.g., Sun et al., 2020) to tertiary level (e.g., Mazuruse&Mberi, 2012). For answering the second research question, "pedagogical translanguaging" and "spontaneous translanguaging" from Cenoz and Gorter's work (2017) are employed. During the detailed data analysis process, four themes were generated for pedagogical translanguaging: translanguaging speech, translanguaging materials, creative writing activities, cross-linguistic comparisons.

#### **Translanguaging Speech**

Nearly all the heritage language educators purposefully mix the languages in class or encourage their students to do so for scaffolding comprehension and making students more engaged. The educators mix heritage languages and dominant languages with different frequencies. For example, in Dávila and Bunar's study (2020) in Sweden, the multilingual teaching assistances tend to keep a balance between the use of students' home language and Swedish since they are responsible for helping the immigrant students maintain the home languages as well as survive in the new environment. In Perera's research (2020), the Tamil teacher predominantly teaches in Tamil and uses English words sometimes for emphasis. Translanguaging speech is indispensable in Mazuruse & Mberi's research setting (2012) primarily because of the lack of the equivalents in Shona of academic English terms such as "aspiration" and "vocal tract" (p. 2027). It is reported as an effective strategy for dealing with unfamiliar content to students (Mazuruse&Mberi, 2012). This may be widespread in



indigenous language education due to the limitation of modern and technical vocabulary. Besides, translanguaging speech happens at various levels. For example, in Kim and Park's poem writing workshop (2020), the teacher asked the students with intra-sentential language mixing: "Do you want to put '이제는현실이라 (Now, it is a reality)' or just '현실이라 (It is a reality)'?" (p. 298). Then the teacher mixes the two languages in the inter-sentential level: "네 (Yes). You need the first two chunks here . . . 아까말씀하실때, 여기공항에서만났을때, 이거를더 vivid 하게설명해주셨던것같은데. 문이이렇게열리면서, 울었다고하셨습니다. (When you talked about it, I think you explained this more vividly. You said that you cried when the landing gate opened)" (p. 298).

### **Translanguaging Materials**

A few studies identify the application of translanguaging materials (e.g., Menken & Avni, 2017; Hornberger & Swinehart, 2012). It is assumed that the materials provided for students are different according to their language proficiency and age. For example, in Menken and Avni's study (2017), for heritage language learners of Hebrew in early ages, a 6th-grade teacher created PowerPoint slides using English, Hebrew and Arabic, and a Hebrew-English glossary was provided for 7th-graders. In Hornberger and Swinehart's research for advanced language learners in a master program (2012), the teacher divided the students into groups and asked them to analyze an interview excerpt with a fluid mixture of Quechua and Spanish.

### **Creative Writing**

Creative writing activity for poetry or books is documented in three articles (Barbour & Quinn, 2020; Kim & Park, 2020; Rowe, 2019). In the multilingual class observed by Barbour and Quinn (2020), students are encouraged to write poems using English and other languages outside school. Kim and Park's study (2020) showcases the processes and products of a Korean heritage learner's compositions of Sijo poetry. For students with multiple linguistic backgrounds in Rowe's class (2019), eBooks composed on iPads integrate their written texts and audio recordings of reading the texts. In addition, peer translation is presented in Rowe's (2019) and Barbour and Quinn's research (2020) as students enthusiastically invited their classmates to translate the texts into different languages.

### **Cross-Linguistic Comparisons**

There are four studies involving cross-linguistic comparisons (Bonomi, 2020, Dávila & Bunar, 2020; Lee & García, 2020; Wu & Leung, 2020). According to them, this practice is usually encouraged for languages with structural closeness. The first study (Bonomi, 2020) in Italy presents that the cognate charts were used for Spanish heritage speakers to reflect on the similarities and differences between Spanish and Italian, the two Romance languages. In Dávila and Bunar's study (2020), the teaching assistant from Palestine talked about the differences between Arabic varieties to the student from Iraq. Wu and Leung's article (2020) depicts how a Mandarin teacher invited her Chinese heritage students to compare Mandarin, the assigned heritage language, with their real home languages such as Cantonese and Fujianese. For instance, the teacher explained that in Mandarin, the bed is called "床" whereas in Teochew, her home language, the bed (床) is called "bed for sleeping (眠床)" (p. 10). Later, students from Fujian expressed that Fujianese had similar ways of saying as they also called the bed a sleeping bed. This evoked hot discussions in class based on the comparisons across Mandarin, Fujianese, and Cantonese. Such cross-linguistic analyses facilitate students' cross-cultural competences, as shown by Benattabou (2020).

### **Spontaneous Translanguaging**

Spontaneous translanguaging refers to the habitual translanguaging activities without consciousness. Although it may happen in every study, it is only explicitly discussed in two papers (Sun et al., 2020; Vijayakumar et al., 2020). According to the collected questionnaire, the researchers (Sun et al., 2020) point out that, in fact, the heritage language teachers deliver spontaneous translanguaging speech more frequently with students than the translanguaging speech with purpose.

#### **4.2.2 Impacts of Language Mixings**

This paper presents the impacts of language mixing pedagogy with three themes: the language, the self, and the society.

##### **The Language**

Language development is the second most discussed impact of pedagogical translanguaging in the existing studies. Students' flexible language uses and improving metalinguistic awareness are presented as the most remarkable affordances in terms of language development. On one hand, performing as models, teachers' translanguaging expressions in oral and written forms encourage students to engage in translanguaging activities and as such, improved their flexible language uses (e.g., Creese & Blackledge, 2011; Menken, & Avni, 2017; Sun et al., 2020). For example, as shown in Menken and Avini's paper (2017), guided by the teachers, Hebrew students frequently mix languages while speaking in class. On the other hand, students' improvement of meta-linguistic awareness is discussed by many studies, especially those with cross-linguistic comparisons (Bonomi, 2019; Dávila & Bunar, 2020; Wu & Leung, 2020). Besides, the translanguaging pedagogy gives spaces for different language varieties under the big language umbrellas (Bonomi, 2020; Wu & Leung, 2020). Many Chinese students in Wu & Leung's work (2020) are from families speaking minority Chinese language varieties such as Cantonese and Fujianese but they are enrolled in the Mandarin heritage language classrooms. With the teacher's translanguaging efforts, these minority Chinese languages are discussed and embraced by students. In Bonomi's work (2020), all varieties of Spanish are introduced to Hispanic students.

However, only a few studies directly report the development of heritage language thanks to pedagogical translanguaging (Belpoliti & Pérez, 2019; Sun et al., 2020). Some students in recognize their improved performance as Spanish-speaking health professionals (Belpoliti & Pérez, 2019). Sun and her (2020) team tried to find out whether teachers' code-switching behaviors relate to children's development in heritage language vocabulary, but it turned out that neither intra-sentential nor inter-sentential code-switching showed a significantly positive relationship with heritage language vocabulary development.

##### **The Self**

Heritage learners' self-construction is the most frequently documented impact from the empirical data. Due to the limited representation of their home languages and cultures at the majority schools, heritage language speaking students often present more learning and behavior problems which leads to higher dropout rates (Bonomi, 2020). The low engagement of minority students is presented in Wu and Leung's study (2020). In their study, Mandarin is assigned as their Chinese home language despite their real Chinese heritage language variety. Feeling that they are not on the same page with their Mandarin-speaking peers, these students hardly engage in the class and become less invisible and inaudible. After the teacher's introduction of multiple Chinese language varieties in class and the hot discussion on these varieties in class, the students feel more confident speaking their heritage language and sometimes voluntarily teach the language varieties to their teacher and peers. However, sometimes students may reject their role as language brokers. In Rowe's class (2019), a boy

who is the only speaker of his heritage language class refuses to translate for his peers as he feels unprepared and unsupported.

### **The Society**

Language mixing makes contributions to students' connection to their ethnic communities (Belpoliti & Pérez, 2019; Hornberger & Swinehart, 2012; Reznicek-Parrado, 2020) and encourages them to think critically regarding linguistic inequality issues (Wu & Leung, 2020). Take Belpoliti and Pérez's study as an example (2019) through translanguaging service learning, the Spanish-speaking in health professions have acquired a strong sense of community and gained deep insights into the health needs of Hispanic immigrants, paving the way for their better service for local ethnic community. In Reznicek-Parrado's report (2020), not only does the translanguaging communication led by the tutors contribute to students' Spanish acquisition, but also strengthen their sense of belonging to the Spanish-Speaking student community since these conversations provide emotional support for them.

In addition to the affordances benefited above, some studies also report that language mixing pedagogy facilitates peer collaboration and learning. In creative writing activities, students enthusiastically invite their classmates to translate the texts into different home languages (Rowe, 2019; Barbour & Quinn, 2020). In Wu and Leung's study (2020), students' discussion about similarities and differences among Mandarin, Cantonese, and Fujianese contributes to their learning of various Chinese language varieties from each other.

### **4.3 Language Mixings in Family and Community**

Outside community language schools, there is no empirical data on how communities make language mixing efforts on heritage language maintenance except the speech and song contests held by Tamil diasporas mentioned by Canagarajah (2012). In contrast, 6 articles report the role of language mixing in family heritage language learning even though they are not as many as studies in educational settings (Canagarajah, 2012; Ghimenton, 2015; Higgins, 2019; Kwon, 2019; Song, 2016; Wilson, 2020). As a microcosm, family plays an essential role in minority language maintenance and revitalization (Fishman, 1970). In this section, the language mixing strategies adopted by caretakers and their impacts on children's heritage language development are discussed.

Resonating with pedagogical translanguaging, the most widely applied language mixing activities for parents is language mixing speech which appears in all the studies. Beyond daily conversations, this activity sometimes happens in engaging sites or moments. A few Korean-American parents used English and Korean with their children during their temporal visits to the museums in Korea, as documented by Kwon (2019). The museums opened the floor for parents to share their family stories in the mixed language with multimodal exhibitions. For instance, hearing the stories of their family members in the Korean War or arranged marriage, the children showed strong interest in continuing the conversations. This activity enlarges children's Korean language repertoire and strengthens family rapport across generations.

Translation is also reported as an effective way for heritage language learning, which is emphasized by Song (2016). There are two types of translation activities presented in her article. First, parents usually ask questions like "What is it in Korean?" and "What is it in English?" (Song, p. 96) after they offer translations for new words or expressions to check their children's comprehension. Second, joint translation is also adopted by the parents. When the children translate what they have read or watched to their parents from English to Korean, the parents help them to express their ideas in Korean and later asked them to confirm (Song, 2016).

Besides, trans-enunciating is employed by parents in Song's (2016) and Canagarajah's (2012) studies. For instance, a mother helped her sons prepare for the local diaspora's Tamil speech context by enunciating the whole speech in Tamil and inviting her sons to write it down in English (Canagarajah, 2012). Later, she explained the general meaning and the context of the speech for her sons. Mixed perceptions arise toward this type of language mixing activity. As presented by Canagarajah (2012), while some people believe that it helps the children to learn the heritage culture and traditional values, others negatively regard it as just imitation without authentic reflection.

## **5. DISCUSSION AND CONCLUSION**

Earlier in this paper, the author shows two main theoretical frameworks of language mixing employed by the empirical data: (a) resource-oriented language mixing viewing personal and societal linguistic repertoires as integrated, such as "translanguaging"; (b) function-oriented language mixing based on the boundaries between named languages, such as "code-switching". This section discusses the pros and cons of the two theoretical orientations in the heritage language education arena.

With no doubt, the resource-oriented language mixing theory has some advantages. First, it valorizes societal diversity and brings everyone's linguistic and cultural knowledge into language education. This facilitates the family engagement in language learning classrooms and endows students with the roles of language broker, especially in creative activities such as the composition of storybooks presented by Rowe (2019). Second, as a glottopolitical tool, language mixing "encourages linguistic activism and a culture of resistance, legitimizing all repertoires and discourses in response to dominant norms and ideologies that not always fit within real language practices of minority groups" (Bonomi, 2020, p. 50). In a debate of Wu and Leung's class (2020) about the relationship between different Chinese language varieties and job markets, students expressed their images of the typical jobs connected to Mandarin, Fujianese, and Cantonese and discussed their ideas of high and low jobs. This provides a valuable opportunity for students to question language hegemony and social injustice.

However, this theoretical approach has some limitations. On the one hand, it may be not effective in language classrooms reliant on standard tests. Regardless of the boundaries between languages, teachers would find it hard to provide answers and standards for the assessments. Second, without emphasis on the differences between languages, students are easily reliant on the majority language due to its high social status and the large amount of input. As a result, the minority language may become "a kitchen language" only spoken at home for simple topics (Zhang, 2012, p. 218). Considering these limitations, language mixing as strategies based on discrete languages is beneficial to some degree. Not only does it make language assessment more convenient, but also improve learners' metalinguistic awareness of both languages by cross-linguistic comparisons (e.g., Bonomi, 2019; Dávila & Bunar, 2020). Hence, Spivak's strategic essentialism (1993) for research through a language mixing lens is recommended. Even though language repertoire is hybrid and fluid, speakers strategically switch to appropriate linguistic resources for different contexts and purposes, showcasing different identities (Canagarajah, 2012).

In summary, this systematic review identifies the language mixing efforts and their impacts on heritage language learning in households, communities, and classrooms. It is hoped that this paper could provide a general introduction to the relevant research status quo and implications for future research and education. As the result section suggests, language mixing practices lead to the improvement of the heritage speakers' linguistic capacities and identity constructions, as well as the betterment of our society in various aspects. According to the review, more research in family and community is strongly warranted, especially in the community contexts. Future research could investigate heritage language education through

the community translanguaging lens (Kim, Dorner, and Song, 2021) to show how community, family, and school create synergy in service of the children's language development. However, the studies in this review are limited as only English-written peer-reviewed journal articles are included. Further literature reviews could cover multiple types of sources including, in part, book chapters and conference proceedings, published in different languages. Moreover, other aspects of this field such as heritage language learners' language mixings in the virtual world are worthy of exploration.

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### **AUTHOR'S BIO**

*Yizhe Jiang is a PhD Candidate in Foreign, Second, and Multilingual Language Education at The Department of Teaching and Learning, The Ohio State University. Her research interests involve bilingual education, heritage language maintenance, and technology for language teaching and learning.*