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**The Effects of Multilingual Learning on Social-Emotional and
Cognitive Development in Children**

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Submitted in Partial Completion of the Requirements for Commonwealth
Interdisciplinary Honors in Elementary Education and Spanish

Bridgewater State University

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ABSTRACT

Children worldwide learn multiple languages at a young age, especially if they do not live in a country with English as the dominant language. While teaching young children languages other than English has not been a common practice in the United States, research shows that the practice is still growing and there is increased awareness of cultural competence in teaching languages (Garcia-Vazquez et al., 2021; Ingle, 2021). This study aims to discover the cognitive and social-emotional effects of learning an additional language at a young age. To examine this, 90 fifth-grade English Learner students were observed for 35 hours in an academic environment learning Science, Technology, Engineering, and Mathematics (STEM). These IRB-approved structured observations were conducted with guiding questions to ensure that data collection was relevant to the research. Students with equivalent capabilities in their languages (both native or heritage and later acquired) were faster than their peers in grasping concepts or ideas and articulating them and tended to be more confident and engaged in the classroom. These observations and prior research suggest a correlation between the acquisition of multiple languages and high social-emotional and cognitive engagement in the classroom. More observations are being conducted of third, fourth, and fifth grade English Learner students and native and heritage English speakers to better examine this correlation. Interview questions with teacher of English Learners supplement these additional observations.

INTRODUCTION

Multilingual learning from a young age is common across the world. Students across Europe and Asia learn at least two languages at school or home as young as six. As English has established itself as a necessary language to learn for international purposes, countries prioritized teaching English alongside their native language. In Europe alone, approximately 92% of

European K-12 students learn a foreign language in school, compared to 20% of American K-12 students (Devlin, 2018). American students find themselves falling behind the rest of the world as they remain monolingual. Multilingual learning has long been the norm in many countries across Europe and Asia, a norm that the United States is slowly developing as the benefits are discovered. Besides the convenience of having multiple languages in one's repertoire, there are clear effects (predominantly positive) on a child's cognitive and social-emotional development if they learn a second language from a young age (Dewaele & Wei, 2012; Kroll et al., 2012; Kwon et al., 2021; Morales et al., 2013).

This research aims to analyze the effects of learning a second language at a young age, especially concerning social and cognitive development. The research will also concentrate on teachers' preparation for working with English Language Learners (ELLs). The focus will be placed equally on English Language Learners and native English-speaking elementary students in the classroom. The intent is to obtain more knowledge about the benefits of second language acquisition at a young age in order to impact public schools' curriculum for elementary students in the United States.

Current proposed research questions:

- How does learning a second language at a young age affect a student's social-emotional development based on classroom observations and teacher interviews?
- How does learning a second language at a young age affect a student's cognitive development based on classroom observations and teacher interviews?
- How prepared or willing are teachers to work with multilingual students?

LITERATURE REVIEW

Social emotional development is defined as the development of a child's ability to experience and express emotions as well as build healthy relationships (Cohen et al., 2005). A child can mature with good mental health, strong empathy, and clear communication skills by ensuring strong and healthy social-emotional development earlier in life. Cognitive development is the development of a child's ability to think, reason, understand, and acquire knowledge (*Cognitive Development Domain*, 2021). Strong cognitive development usually results in strong academic performance (Finn et al., 2014) and a variety of comprehension skills, such as contextualization and the understanding of cause and effect.

Bilingual education is more complicated than initially perceived. While bilingual education does include using two languages in the classroom, it also includes maintaining and strengthening a language. It requires knowledge of multiple disciplines, including history and politics. It is used in various manners, depending on the students in the classroom, as it may work specifically to connect new students to a new school or country (Baker, 2010). Bilingual education requires a variety of additional knowledge compared to monolingual education to be the most effective.

Multilingualism is a term used to describe a situation where two or more languages are used. In this paper, the context is regarding either children who grew up speaking multiple languages or children who learn multiple languages in school. Multilingual learners can refer to English Language Learners (ELLs), children with immigrant status, children who grew up speaking multiple languages at home, or children who learn multiple languages in school. Bilingualism is a term used to describe a situation where two languages are used. This paper's context is regarding either children who grew up speaking two languages or who learn one language in school in addition to their native language. Bilingual learners fall under the category

of multilingual learners but are limited to two languages. A native language is a person's first language learned (learned since birth) if it is the dominant language in the country they have lived in for most of their life. A heritage language is a person's language taught to them by their family but is not the dominant language in the country they have lived in for most of their life (Polinsky, 2018). There is a large variety of heritage speakers, although they all fall under the definition above. One example of a heritage speaker is a student who has lived in the United States all their life, speaks Spanish at home with parents, but speaks English at school and with their siblings. That student is a native speaker of English and a heritage speaker of Spanish (Potowski, 2018).

Dual Language Learners (DLLs) fall under multilingual children. They are students under eight years old with a parent who speaks a language that is not English at home.

One must consider that students exposed to multiple languages from a young age often have other factors that may affect their social-emotional or cognitive development. These factors include low socio-economic status and/or cultural diversity, which may not be as apparent in monolingual children (Veenstra & Kuyper, 2004). Many studies attempt to control for these variables but acknowledge that the variables may have an impact (typically negative) on the development of the children studied.

This study aims to investigate the effects between bilingual education and social-emotional and cognitive development through analysis of previous research and implementation of individual research.

COGNITIVE DEVELOPMENT

Until 1962, research had only found disadvantages to bilingual learning based on group and case studies (Diaz, 1985). However, in 1962, Peal and Lambert published the results of their study, which demonstrated higher cognitive performance found in bilingual children. The distinct difference between this study compared to others was its focus on “balanced bilinguals,” meaning children with similar capabilities in both languages (Diaz, 1985). Thus began a realization in the field that not only were previous studies focusing on bilingual children who did not have similar capabilities in both languages, but they were also comparing bilingual and monolingual children with different social experiences and variables resulting from their language abilities. Even though researchers tried to control for all variables, including age, socioeconomic status, and years of schooling, other social variables (experiences in school, home environment, personal background, etc.) could not be controlled and thus skewed the data (Diaz, 1985). Additionally, some case studies that found bilingualism to have adverse effects only focused on outward speech, not the cognitive behavior itself, which gave the data a negative connotation (Diebold, 1966). Within the past 20 years, much more all-encompassing research has been conducted regarding bilingual learning and its outcomes.

Bilingual learning was initially considered frightening to many in the United States. A worry for administrators, teachers, and parents regarding teaching children two languages at an early age is their ability to learn at the same rate as their monolingual peers. However, this worry is unfounded. According to Genesee and Nicoladis (2005), bilingual learners develop their knowledge of their languages at the same rate as monolingual learners. The language milestones are similar, and both types of learners have the same rate of knowledge of grammar agreement (Genesee & Nicoladis, 2005). This means they connect words with their properties, such as part of speech or their function in a sentence. In addition, bilingual learners may use structures from

their stronger language to help their weaker language, resulting in a transfer of linguistic aspects (usually grammatically) (Genesee & Nicoladis, 2005). Otherwise, bilingual and monolingual learners have little to no difference in the learning development rate.

Code-switching is a cognitive and social factor of learning two or more languages from a young age. Code switching is the use of two languages in one sentence, which is common in bilingual children (Genesee & Nicoladis, 2005). It is not to be confused with code-mixing, which refers to the use of one language in the grammatical sense of another language (Mabule, 2015). An example of code switching would be "Gracias for driving me to the escuela!" while an example of code mixing would be "Yo parkeo el carro" (parkear uses an English verb with Spanish grammar). From an early age, bilingual learners know when to code switch and when to use each language individually. They are good at taking cues from the people around them, even if they are not direct cues. For example, suppose the student code switches in front of an adult and the adult responds with confusion, such as "what?". In that case, the student knows to immediately switch to the language necessary or to communicate in another manner. This ability to recognize how a failure in communication occurs according to language barriers is not as commonly found in monolingual children. While code switching is usually seen as an imperfect acquisition of a language, it can be used in the classroom to effectively teach in multiple languages (King & Chetty, 2013). It allows students to get accustomed to a new language without completely switching to it. Code switching can be common in young students. However, it does not necessarily represent a problem that needs eradicating but is another tool that can promote multilingualism.

Previous research tends to find more cognitive development benefits for multilingual children than for monolingual children. There is a significant difference between the two

populations regarding cognitive tasks such as working memory and executive function. In multiple studies, multilingual children have shown enhanced executive function compared to monolingual children (Kroll et al., 2012; Kwon et al., 2021; Morales et al., 2013). Bilingual children tend to demonstrate better executive control than monolingual children if their language levels are similar in both languages. In a comparison of six-year-olds, bilingual students performed better than monolingual students on activities that tested their executive control (EC) (Bialystok & Barac, 2012). If the child's level in their languages is similar, they tend to perform better on activities that test their executive function (Thomas-Sunesson et al., 2018). This enhanced function then affects their emotion regulation. Bilingual children may also be more accurate using their working memory but may take longer to process than monolingual children due to emotional interference. Bilinguals have better working memory if they have solid experience with languages (usually relating to some manner of fluency) at a young age (before the age of 6) (Marini et al., 2019). In addition to better executive function and working memory, bilingual children are found to have better inhibitory control (the ability to suppress responses to stimuli) compared to monolingual children (Bialystok & Martin, 2004). This results from their need to constantly control potential code switching to speak consistently in one language (Fox et al., 2019). They also tend to be more accurate in spatial-perspective activities compared to monolingual children (Greenberg, Bellana, & Bialystok, 2012).

There are additional benefits of multilingualism, as demonstrated by various research studies. They demonstrate superior flexibility in cognitive thinking due to the acquisition of multiple languages (Marcecova et al., 2013); multilingual learners can acquire more languages easier than monolingual learners (Rezaei & Hashim, 2014); and have greater creativity skills as a result of their language skills (Fürst & Grin, 2018). With a second language being consistently

used in any context (in school, immersion programs, at home, etc.), there is a distinct increase in the ability to use metalinguistics in bilinguals compared to monolinguals (Bien-Miller et al., 2017) (Daller & Ongun, 2018). Because multilingual children use different languages constantly, they unintentionally become more cognizant of metalinguistics (the awareness of words being used, how to say the words, and the meaning of the words). For example, a child who speaks Spanish and English understands the difference in pronunciation of the 's' in "usar" [oo-sar] compared to "use" [yooz].

SOCIAL-EMOTIONAL DEVELOPMENT

While bilingual children show many cognitive advantages, there are also distinct impacts on social-emotional development for multilingual children. There is less research on social-emotional development as a result of multilingualism compared to cognitive development, resulting in a general dearth of data regarding the topic.

There is clear that at minimum, learning multiple languages at young ages does not cause a delay in social-emotional development but instead has no impact whatsoever (McLeod et al., 2015). Some researchers have discovered that there is no change in development with the addition of extra languages. Dewaele (2019) noted in his study regarding multilingualism and emotional intelligence that there was no correlation between people who know multiple languages and higher levels of emotional intelligence.

Previous research shows that multilingualism does not delay social-emotional development. However, depending on their environment, multilingual children may have a more negative emotional development. If they attend a monolingual school, they tend to feel more embarrassed about the language they know is not the language used in school, resulting in

negative emotions regarding multilingualism (Kaveh & Lenz, 2021). However, this is also affected by their immigrant status and their control over their other languages. Dewaele & van Oudenhoven (2009) found that young teenagers from London who had proficiency in multiple languages tended to score lower on Emotional Stability compared to their high scores in Open-mindedness and Cultural Empathy. The stress of adapting to different cultures resulted in a lack of stable emotions. However, the study also found that different languages allow individuals to be more aware of cultural impacts due to how social factors and location shape personality.

If the environment actively involves multilingual learning, there is a greater chance of positive social-emotional experiences and, thus, development. For example, in a classroom in the Sicily region of Italy, a school emphasized bilingualism in its environment by including multiculturalism and emphasis on strong social relations. Because of this, bilingual students developed strong relationships with other students and teachers, which positively affected their social development (Akutina, S. & Akutina, A., 2020). In a separate study conducted in a Canadian university, students who experienced multilingual (or plurilingual in their words) instruction tended to have higher “plurilingual and pluricultural competence (PPC)” as well as significant differences in empathy levels (Galante, 2021, p. 316). Dual Language Learners (DLLs) in the United States were found to have better social emotional development than native speakers of English (Halle et al., 2014) due to their bilingual instruction. Additionally, there was a significant change in impact on bilingual or multilingual students if the environment actively included multilingualism and multiculturalism. The environment of a student clearly has as a strong impact on their social-emotional development, including the people within the environment.

Social experiences strongly influence the learning of a second language. Language socialization is an effective way to teach learners a second language as it combines the academic aspects of learning another language with the social aspects and contexts of the language (Duff, 2019). It helps learners understand the cues of conversation and how they use the context in their conversations. Additionally, children (not even necessarily bilingual) raised in multilingual environments better understand perspectives than monolingual children (Fan et al., 2015). This results from the need to understand which language was spoken by which person and which people could communicate with one another. The children then absorbed more information on what was necessary for efficient communication, resulting in better social cognition skills than monolingual children (Fan et al., 2015). The environment, including the people within it, significantly impacts multilingual children's social-emotional development.

Parents, an aspect of a child's other environment(s), have an essential role in their children's social-emotional development, especially relating to their adjustment to another language or social environment. A child develops their language skills from their contact and/or attachment with their parents at a young age (Belsky & Fearon, 2002). Additionally, depending on the strength of the relationship, the child's language skills could be improved (Halle et al., 2014). "Language conveys cultural meaning," and a parent can teach their culture to their child through and with their language (Halle et al., 2014, p.745). Specifically, in a study by Oades-Sese and Li (2011), children's language development in English (the language used in school) improved if the parents had higher levels of assimilation in the new culture/environment. Thus, parent acceptance and active involvement in learning the languages they do not know are essential for fostering positive development. Parent acceptance also plays a role in children's empathy levels.

Multilingual children tend to have greater empathy due to their acquisition of multiple languages and thus also cultures. A study of students in New Jersey and Spain found that multilinguals tended to be more accepting of immigrants than monolinguals, thus displaying cultural empathy (Garcia-Vazquez et al., 2021). There did not necessarily need to be a shared language between the immigrant and the native individual to facilitate acceptance, demonstrating more positive thoughts toward other cultures by multilinguals. In addition to the development of cultural empathy, multilingual learners develop cognitive empathy (the ability to take the mental viewpoint of another person, as opposed to the feeling of shared emotions (emotional empathy)) (Smith, 2006). Dewaele & Wei (2012) concluded that the frequent use of several languages was positively correlated with cognitive empathy.

PREPARATION OF TEACHERS TO WORK WITH MULTILINGUAL CHILDREN

The teacher's mindset is critical in their approach to working with multilingual children. Their mindset changes depending on the personal background of the teacher, the languages the teacher possesses, and the workplace environment, among other factors.

Teachers may have different underlying expectations of multilingual children depending on the children's culture of origin. Overall, teachers consider multilingual students a challenge (Mitchell, 2013), resulting in a lack of will to teach them. Teachers tend to have more positive expectations for students who come from ethnic majorities compared to ethnic minorities (Tenenbaum & Ruck, 2007). This is not necessarily directly related to the children's language abilities, but to their outward appearance and underlying biases teachers may have.

A significant factor of teachers' perspective regarding multilingual students is their stance on assimilation (adaption to the most popular norm). Teachers who believe in assimilation

believe students should only speak English and ignore their culture while in school. This results in teaching children as monolinguals and alienating them from their cultures (Viesca & Teemant, 2019). On the other hand, a teacher could focus on pluralism, meaning they utilize the students' culture, languages, and background while integrating the students into the school system (Viesca & Teemant, 2019). A teacher's perspective varies depending on their background and the school system they teach.

There is also a difference in perspectives depending the learner's situation. Teachers may feel more comfortable working with a student who has lived in the country their whole life but has not learned a specific language yet compared to a student who is a recent arrival from a foreign country. The teacher also needs to be well-equipped with strategies to teach different types of multilingual students depending on the students' situations.

For teachers to be more accepting and open to their multilingual students, they must first be committed to the system they work in and have faith in their abilities to positively influence their students. The teacher's experiences with languages and multiculturalism shape this faith in one's abilities. If a teacher has a history like that of their students regarding languages, it can make the students feel much more comfortable and included in the classroom (Ingle, 2021). For example, a teacher who was an ELL student can directly relate to their ELL students, thus providing those students with a person who understands exactly what they are experiencing. Additionally, they can adjust their teaching strategies to be more effective due to their personal experience.

The workplace location can also significantly affect the teachers' perspectives, as seen in Toronto, Canada. Ingle (2021) found that multilingual teachers in Toronto have a more positive identification of culture. They view Toronto as a "multicultural center" and as a result are more

open to multicultural students than teachers in other locations may be. They have heightened cultural awareness due to an environment that facilitates positive views of multicultural people. Toronto also has a specific program, the Literacy Enrichment Academic Program (LEAP), which works to educate children (who may have had refugee status) in how Canadian school functions as well as teach languages and academic material (Ingle, 2021). With such programs, teachers feel more prepared to aid their students with refugee status, who are usually multilingual and multicultural. These programs also encourage diversity in the academic curriculum, so children are exposed to more literature about various cultures throughout the school year. Including students' cultures in the curriculum makes them feel more included and eager to learn, sentiments that teachers perpetuate.

RESEARCH METHODOLOGY

Method

This research consisted of collecting and analyzing qualitative data (observations and interview responses). Observations were conducted using an observation guide and keeping the three research questions in mind. In the case of Group C in the Hanscom program, the observer was also an assistant teacher and thus directly involved with the students being observed. In-person interviews were conducted using the interview questions and prompting teachers to elaborate upon their responses. Online interviews were conducted using an online form that allowed teachers to respond with as much or as little elaboration as they wished.

Context

This project was conducted through observations of multiple groups, interviews of English Learner (EL) teachers, and online interviews of general education teachers. Three different schools/programs were observed in the collection of this data.

The STEM-focused program in Hanscom, MA took place in a large interactive classroom with various hands-on activities and colorful informative decorations. It contained all monolingual “head” teachers, the majority monolingual assistant teachers, and teachers from the schools who attended the program. English was most often used in lessons with the students, although one lesson included written translated instructions. This program was observed from 9 AM to 2 PM on June 8th, June 15th, and every day from June 27th to July 1st in 2022.

For a combined total of 18 hours, a mix of EL-only and mixed EL and heritage speaker classrooms were observed between the two elementary schools. The Taunton and Stoughton elementary schools contained monolingual general education teachers and multilingual teachers for English Learners. Students were observed in both their general education and English-Learner-specific classrooms. Taunton students were observed for a total of eight hours over three days. Stoughton students were observed for a total of ten hours over three days.

Participants

Observations were made of fifth-grade English Learners in lessons regarding STEM subjects. Additional observations, interviews with EL teachers, and online interviews of general education teachers were conducted in public elementary schools in Stoughton and Taunton, MA.

The chosen students needed to fit the following criteria: they were classified as English Learners by the Massachusetts school system and they were in the grade level range of 3 to 5. The teachers chosen to be interviewed in person were teachers of English Learners for at least

one year and the teachers of classes the researcher observed. There were three total, two from Taunton and one from Stoughton. The teachers chosen to be interviewed online were general education teachers for at least one year who had experience with English Learners in their classroom. There were three total, one from Taunton and two from Stoughton.

At the Hanscom program, any assistant teachers who spoke the language that the students spoke did not communicate with them in that language. Teachers from the schools attending the program would sometimes use the dominantly spoken language to communicate with the EL students, either to clarify instructions or lesson points, or to discipline. The students' demographics ranged from group to group; the first two groups consisted of Mandarin and English speakers while the third group consisted primarily of Brazilian Portuguese speakers. English levels also varied across the groups; the first group was primarily speakers at WIDA levels 4, 5, and 6, the second group a variety of speakers, and the third group mostly speakers at WIDA levels 1 and 2.

Students' English levels varied considerably, although English-Learner-specific classes would group those of similar levels. In the Taunton elementary school, most EL students were Brazilian, although there was also a good portion of students from other countries. In the Stoughton elementary school, there was more variety in the mix of English Learners, although there was still a large population of Brazilian Portuguese speakers.

Data Collection Tools

The specific research questions are:

- 1) How does learning an additional language at a young age affect a student's social emotional development?

2) How does learning an additional language at a young age affect a student's cognitive development?

3) How prepared/willing are teachers to work with multilingual students?

The observation guide can be found in Appendix A and the interview questions in Appendix B.

Regarding the STEM-focused program in Hanscom, Massachusetts, only one data collection method was used: classroom observations. During the week the researcher was an assistant teacher at Hanscom, she conducted observations as a participant (assistant teacher). While teaching the students, she took note of the verbal and nonverbal reactions to learning new subjects in their non-heritage language as well as their social skills with other students and teachers. For example, a question from the observation guide regarding what facial expressions English Learners display while learning was expressed in the observation note "expressed frustration or confusion through facial expressions, frowning, pursed eyebrows." She also observed the teachers and assistant teachers in their interactions with the students. She took detailed notes of the observations she made throughout the day, which were then analyzed when placing them into results.

Two different data collection methods were used in person: classroom observations and interviews of EL teachers. Observations focused upon verbal and nonverbal reactions to learning new subjects in the EL students' non-heritage language and their social skills with other students and teachers. Teachers' interactions with the students were also observed. Detailed notes of the observations were made through the process and later analyzed when placing them into results.

Data Analysis

Data was analyzed by filtering and contextualizing it with the research questions provided and with all information gathered from the literature review. There were some outside factors that were taken into account when analyzing. For example, for Group C of the Hanscom Program, the researcher played a role as an assistant teacher in her observations, unlike any other group. Therefore, she takes this different perspective into account in her analysis. Additionally, there are a variety of English language levels of the students, as well as their backgrounds. There is also a difference in schools and their education systems. All these outlying factors are recognized when analyzing the data.

Finally, the data was collected in two different forms: observations and interviews. This data is analyzed and contextualized with the same research questions and information from the literature review. However, the nature of each form of data is taken into account in its analysis.

RESULTS

Results are grouped and discussed based on each of the school contexts.

Hanscom Program Observation Data

At the STEM-focused program in Hanscom, MA, three different groups of students were observed, who will be referred to as Groups A, B, and C. Group C was observed for a total of 25 hours, as opposed to the 5 hours each that Groups A and B were observed because the interviewer was assistant teaching in that week. Group A had a majority of WIDA levels 3 through 5 of English, Group B had a wide variety of English levels (WIDA levels 1 through 5), and Group C had a majority of WIDA levels 1 through 3 of English. All levels (which will be referred to only as their level number) were assessed according to WIDA levels, which can be

found in the Appendix. Level 1 is Entering and Emerging (EE), level 3 is Developing (D), and levels 4 and 5 are Expanding and Bridging (EB) (Cammilleri et al., 2009). Additionally, Groups A and B were from a dual language school that taught both Mandarin and English.

Group A tended to have a quick response time (compared to heritage English speakers); they could understand what the teachers were conveying. When talking amongst themselves, they spoke in English (never in their heritage language nor in Mandarin). They used language heritage speakers use such as “like...” or “um...” They also used slang phrases from American culture, such as “big boy,” “sheeeeeeee,” and “that’s Janet’s ‘tea’.” There were high levels of interaction between the students and the teachers. The students understood advanced words and phrases such as “context clues” and “function.” They had no difficulty telling stories, listening to one another, and thinking critically about one another’s contributions.

When there was miscommunication or confusion, students only expressed their frustration or confusion aloud after being called on. Instead, they expressed their confusion in facial expressions, which assistant teachers sometimes would pick up on and clarify. Some students would raise their hands, but it was uncommon. Students’ cultures were not often mentioned among the students themselves. However, if they were, students would correct one another about cultural differences, but not teachers. For example, a teacher asked if a student’s shirt with the word “Selena” and a woman’s face referred to Selena Gomez, to which the student shrugged. However, when a classmate asked the same question, the student clarified that it was Selena Quintanilla, not Selena Gomez.

In Group B, students with levels 1 and 2 (EEs) had difficulty paying attention (as evidenced by looking at anyone but the teachers, fidgeting, and a glazed over expression on their faces). In comparison, students with levels 3 through 5 (DEBs) were fairly engaged. EEs tended

to speak to other students in their heritage language or Mandarin while DEBs would talk to one another in English. EEs would take more time to follow directions as they would need to check the board that displayed directions multiple times over. Several of the same DEBs would comment/volunteer (they appeared to enjoy being engaged and interacting), while EEs appeared to be bored or indifferent. DEBs would clarify directions in Mandarin to EEs if they were confused. They would also socially interact using Mandarin if that was the stronger language. All students tended to become more involved in physical activities/crafts that did not require much language, whether working together or individually. On the other hand, activities that required constant proficient language abilities had less student engagement if the group had a majority of EEs, unless they contained visuals that helped students follow along.

In Group C, there was a majority of students with levels 1 and 2 (EEs), with a few exceptions that either tested out of the English Learner program that year or would test out soon (based on social conversations with the students and their teacher). Regardless of their English levels, the students tended to speak to one another in their native language as it was easier for the EEs, and most of the class spoke Brazilian Portuguese (with three exceptions, all of whom had WIDA levels 4 or 5). Better English speakers among the students would translate for their EE classmates during times of instruction or activities. Students would help one another a great deal in their native languages, making the class more comprehensible for the EE students who were not fully aware of what was occurring without translation. More students in the class became engaged in projects that did not involve language as opposed to activities that did due to the difficulty of communicating in English. Students with intermediate or advanced English levels (DEBs) tended to participate more and with greater confidence than students with novice levels of English (EEs).

Due to the number of EE English learners in the class, the teachers created an activity and printed out the instructions in the different languages of every student. When the students read the instructions in their native language, they appeared to be happier and more engaged, understanding instantly what they would be doing with the activity. They became more excited to do the activity that was translated as opposed to all others. It also created an opportunity for conversation and connection between students and teachers.

Hanscom Program

	Group A	Group B	Group C
Level(s), Grade(s), & Languages	Majority WIDA levels 4 and 5 (EBs) Dual language school of Mandarin & English	Variety of English levels Dual language school of Mandarin & English	Majority WIDA levels 1 and 2 (EEs) Majority Brazilian immigrants (recent and older)
Engagement	Quick response time	EEs had difficulty paying attention; DEBs were engaged Generally more involvement in physical activities that did not require much language	Higher engagement in projects not involving language DEBs participated more & with more confidence than EEs
Interactions with Classmates	Spoke in English amongst peers	EEs spoke to one another in their heritage language or Mandarin DEBs socialized in English	All who shared a heritage language spoke to one another using it
Interactions with Teachers	High levels of interaction, comfortable	DEBs were visibly more comfortable with teachers compared to EEs	DEBs were more open & social with teachers compared to EE peers

In Stoughton and Taunton, MA, 15 different groups were observed, although all mixed classrooms being observed included students that were observed in EL-only classrooms. To maintain a measure of separation, the groups will be separated by school and have similar labels if they contain the same students. For example, EL-only classrooms will be labeled with numbers, while mixed classrooms with the same EL students will be labeled with the number and an accompanying letter. Due to the information made accessible to the researcher, EL Taunton school students are referred to as high level (HL), mid-level (ML), or low level (LL) and EL Stoughton school students will be referred to with their WIDA levels.

Both elementary schools use the “pull-out” method, meaning EL students get removed from their classroom for approximately 30 to 45 minutes per day for a focused lesson with the EL teacher. Therefore, the main groups will be the groups of EL students that were pulled out of their classrooms, and the associated groups will be the general classrooms. The Taunton school had eight groups (groups 1 through 5A) observed for eight hours. The Stoughton school had seven groups (groups 6 through 9) observed for ten hours.

Taunton School Observation Data

Group 1 consisted of third-grade students of majority high English levels (HLs). These students tended to understand questions given to them easily and gave informative responses rapidly. They interacted well with their classmates, helping one another out when they may struggle. For example, their peers repeated a word a student struggled with as aid. They also were good at taking turns with one another. The students had clear positive interactions with the teacher, displaying strong emotional bonds. Students were generally excited to contribute, both regarding personal stories and in the academic setting. They primarily expressed their feelings aloud and spoke as often as they could. During the lesson, they quickly remembered information

from the reading they did earlier in the week. They showcased their abilities to read effectively with great joy, as emphasized by the teacher's positive reactions to their contributions.

Group 1A consisted of Group 1's students and native English-speaking students in a third-grade general education classroom. In this classroom, EL students answered at the same response rate as their native English-speaking (NE) classmates. They were initially hesitant to participate but were willing to volunteer when encouraged. When responding as a class, EL students answered at the same response rate as their peers. They interacted with their classmates easily and well in a friendly manner. When partnered up or in groups, they worked well with classmates academically and socially (used math blocks together or excitedly interacted during coloring time). When interacting with the general education teacher, students accepted aid easily and showed the same air of respect that NE students showed. Academically, there was not a stark difference between EL and NE students. HLs could read along at the same rate as their NE peers while LLs struggled a little but still tried. The EL students participated the same amount as their NE peers, whether actively engaging in a lesson or repeating words with the class when prompted by the teacher. However, working with partners did help English Learners focus better on the task in class.

Group 2 consisted of high and mid-level fourth-grade students. This group was a combination of two usually separate groups (and their EL teachers) as they were working on a group project together. These students had a rapid response rate, even if their responses were not entirely correct. They sometimes also answered in their heritage language and had the answer translated for them. Students were comfortable with their peers, especially those who were part of the same culture and shared the same language. When working in pairs, they would speak to one another in English and help each other spell out words. They would also help one another

with pronunciation if a student was struggling. With the teachers, students were happy and open. Positive feedback from the teachers created trust, and respect was earned on both sides (teachers ensured students did not make fun of one another's pronunciation). Students were comfortable accepting help and asked for it when they needed it. In academic settings, students felt comfortable taking their time reading and pronouncing; they did not feel afraid to try even if they had trouble. When receiving an explanation regarding the group project that was planned, they had a multitude of clarifying questions that they were unafraid to ask.

Group 2A consisted of some of Group 2's students and native English-speaking students in a fourth-grade general education classroom. In this classroom, some EL students struggled with the independent work assigned to them while others did well with it (this was similar to their NE peers). They communicated with one another in English and interacted with their NE classmates easily; one showed an NE classmate how to do a part of a project that the student was confused about. The EL students had no issues with asking for help from the teacher; they were not as familiar with them compared to their EL teacher, but they were still comfortable. Because students were constantly asking the teacher for help, it implied that they were unsure about doing any work independently. On the other hand, one EL student's work was shown as an example to the class, and they were clearly very proud to have been chosen. This same student proved to be less focused in the EL class compared to the mixed class.

Group 3 consisted of high and mid-level English learners who had Individualized Education Programs (IEPs), so while their English levels were high, their general academic achievement was low. These students were very comfortable with one another and eager to share; they tried to give away cards to each other during an educational card game. They demonstrated a great deal of physical affection and social conversation toward their EL teacher.

There was no hesitation in trying and making mistakes because they knew they would learn with their corrections (i.e. unafraid to be wrong in sounding out a word sound by sound). The students were also eager to participate throughout the lesson, they would volunteer immediately prior to the beginning of the review card game.

Group 4 consisted of mid-level third-grade students. These students had various completion times for group assignments (one group finished very quickly, one took a medium amount of time, one took a long amount of time). If given the opportunity to socialize, students spoke with one another in their native language. They worked well together in pairs (if they were part of the same culture, they discussed answers in their native languages; if not, they discussed in English). Students were very open and comfortable with the teacher, and they were confident enough that they were willing to argue the validity of their answer to the teacher. They were very creative in defending their answers to ensure they got points in a review game. For example, students were asked to list four things that are slow, and one group presented a phone charger because it charges a device slowly, a thought that had not entered the teacher's nor the researcher's mind (one heritage and one native English speaker, respectively).

Group 5 consisted of high level third-grade students. These students took the average amount of time to come up with answers compared to one another. They were comfortable with one another and socialized in English. The students were also very comfortable interacting with the teacher; they hugged them when they were pulled out of their general education classroom. In the same review game that Group 4 did, a group also came up with the phone charger for the same reasons. They also thought of a leaf because it is slow when it falls off a tree.

Group 5A consisted of Group 5's students and native English-speaking students in a third-grade general education classroom. EL students responded to questions easily and at the

same speed as their NE classmates. They socialized mainly with one another and not much with their NE peers. With the teacher, they were open and comfortable, although not nearly the same level as with the EL teacher. They appeared significantly more comfortable with the EL teacher in the classroom with them. In the classroom, EL students appeared to be much quieter compared to other NE students and they did not appear to actively engage with the story being read by the teacher (although neither did the majority of their peers). During a math lesson, when students were asked to show “5+1” on their fingers, one EL student showed three fingers on one hand and three fingers on the other. The EL students generally appeared to pick up the lesson at the same time as most of their NE peers.

Taunton

	Group 1	Group 1A	Group 2	Group 2A	Group 3	Group 4	Group 5	Group 5A
Level(s), Grade(s), & Languages	HL & MLs 3 rd grade	Group 1 & native English-speaking students	HL & MLs in EL-only classrooms	Group 2 & native English-speaking students	HLs & MLs with IEPs	LL students	HL students	Group 5 & native English speakers
Engagement	HL & MLs understood questions easily & gave rapid responses Showcased abilities to read	EL students had the same response rate as NE peers No distinct academic difference between EL & NE students	Rapid response rate, even if not correct Unafraid to ask clarifying questions	Some difficulty with individual work	Eager to participate	Variety of completion times for assignments Creative in defending academic answers	Average amount of time to respond Creative in defending answers to academic questions	EL students respond and pick up the lesson at the same speed as NE peers Appeared quieter compared to NE peers

	effectively							
Interactions with Classmates	Helped peers when they were struggling	Interacted easily with peers, both academically & socially	Comfortable with peers, especially with shared cultures	Interact easily & well with NE classmates	Comfortable with peers & eager to share	Socialize in their heritage languages	Comfortable with peers	Socialize primarily with other EL peers
Interactions with Teachers	Strong positive emotional bonds with teacher	Comfortable with general education teacher but not the same amount as with EL teacher	Happy & open with teachers	Comfortable with general education teacher	Physical & social affection towards EL teacher	Open & comfortable with the teacher	Comfortable with the teacher	Comfortable with general education teacher

Stoughton School Observation Data

Group 6 consisted of one fifth-grade level ½ (EE) student (their level was never specifically defined). This student is a Brazilian Portuguese student who arrived in the United States less than one year ago. They responded quickly to questions when given visual aids and they were allowed to respond in Portuguese if they forgot the words in English (the teacher understood Portuguese fairly well and could translate to English for the student). The student was clearly comfortable with the teacher and eager to learn. They took criticism easily and corrected themselves when the teacher corrected them. They were very open in sharing their emotions, thoughts, and feelings through facial expressions, physical gestures, and verbalizations. During the lesson, they contributed additional thoughts confidently and easily and were unafraid to sound out words or speak, even if they lacked words. They benefited well from positive reinforcement but were also heavily intrinsically motivated.

Group 6A consisted of Group 6, one level 3/4 (DE) EL student (their level was never specifically defined), and native English-speaking students in a fifth-grade general education classroom. These students responded quickly when working with the teacher one-on-one. The activity of the day focused on individual work, so there were very little interactions with classmates. There was waving and smiles between other classmates as a silent way to socialize. The EL students clearly felt comfortable working with their teacher; they were eager to learn and willing to take all constructive criticism and advice. The EE student was less animated with this teacher compared to the EL teacher. In this class, both EL students appeared to show confusion or distraction by putting their hand on their head, fidgeting, and looking around. However, they verbally asked for elaboration on a topic or word in addition to using facial expressions. The high use of technology in the classroom allowed for individual tasks thus greatly aiding the EL students. The level 1/2 (EE) student did not fully understand verbal instructions without accompanying visuals (seen through the exit ticket made by the teacher).

Group 7 consisted of fourth- and fifth-grade students with WIDA levels 3 and 4. They did not require much time to process and respond to questions prompted to them. They easily interacted with one another and would teach a peer if they were confused. They sometimes spoke to one another in their native languages, although they used English for the most part. The students enjoyed pleasing the teacher and clearly felt comfortable in the classroom. They did not hesitate to ask questions that came to mind, questions that were accepted and expanded upon. Aid from the teacher was easily accepted while practicing (they would repeat a correction to ensure they cemented it in their minds). Students were well-engaged throughout the lesson (displayed by looking at the teacher and making eye contact). When expressing emotion, English Learners with more advanced English tended to rely on facial expressions more than their less

advanced English Learner peers. A combination of languages was used in the classroom to help the less advanced EL students, as was a mix of technology.

Group 7A consisted of one level 4 student from Group 7 and native English-speaking students in a fourth-grade general education classroom. This student took the same amount of time as any other student to answer questions. They were highly socially active with no visible hesitation to interact with their peers. With the teacher, they had the same type of social-emotional interactions as with their NE peers. Academically, this student engaged with the lesson as much as any other native English-speaking student. They appeared to take instructions easily with no confusion in their listening skills. Reading was a more difficult subject for them compared to math.

Group 8 consisted of third- and fourth-grade students with WIDA levels 3 and 4. These students did not take much time to process and respond. They worked comfortably and well with one another. They were good at taking turns and supported one another when a student contributed the right answer (for example, one student clapped when this occurred). They easily communicated with one another in English as opposed to in their heritage languages. These students enjoyed pleasing the teacher and participating; they felt comfortable contributing in class and asking clarifying questions. They tended to express any thoughts or feelings aloud, although they sometimes used facial expressions to accompany the verbal expressions. The students loved volunteering to answer and were very engaged (they would raise their hands even when they did not know the answer). They were also eager to contribute when another classmate was struggling.

Group 8A consisted of one 3/4 level student from Group 8 (their level was never specifically defined) and native English speakers in a fourth-grade general education classroom.

This student happily and comfortably interacted with their peers. They were helpful to their classmates (i.e. picked up a peer's earbuds when they dropped them, brought a classmate their lunchbox and water). The student appeared to be generally comfortable with the teacher, and they also interacted easily with the assistant teacher for the day. While taking a vocabulary quiz, they were able to begin prior to the reading of the sentences aloud as they did not immediately require this aid. They took more time than most of their peers in the class but were not the last to finish. Academically, they became more engaged in the lesson when provided visuals or hearing trigger words (i.e. "football fan," "games on TV"). They were eager to volunteer when they were the first to answer a question, especially in math.

Group 9 consisted of second- and third-grade students with WIDA levels 2 and 3. Academically, they responded within a reasonable amount of time, especially when given visuals. They were good at taking turns with each other and they were at minimum friendly with everyone in the class. They spoke to one another in English and shared energy levels. With the teacher, they were generally comfortable and wished to talk about their day or something they discovered recently. Academically, they were excited to share knowledge they had. Even when they were having trouble reading, they were not embarrassed, nor did they mind corrections. When they were given an online assignment and a book, they easily slipped into focus mode, allowing them to work independently of one another.

Stoughton

	Group 6	Group 6A	Group 7	Group 7A	Group 8	Group 8A	Group 9
Level(s), Grade(s), & Languages	5 th grade level 1/2 student	Group 6, a level 3/4, & native English- speaking peer	4 th & 5 th grade Levels 3 and 4	Level 3/4 student from Group 7 & native English-	3 rd & 4 th grade Levels 3 and 4	Level 3/4 student from Group 8 & native English-	2 nd & 3 rd grade Levels 2 and 3

	Brazilian Portuguese newcomer			speaking peers 4 th grade general education classroom		speaking peers	
Engagement	Responded quickly to questions given visual aids Allowed to respond in Portuguese Contributed thoughts confidently & easily	Responded quickly working individually with the teacher	Did not require much time to process & respond Fairly well-engaged throughout lesson No hesitation to ask questions Less advanced ELs relied on nonverbal communication more than more advanced ELs	Same amount of time to answer questions as compared to peers Same amount of engagement compared to NE peers	Did not take much time to process & respond	Took more time than NE peers in a vocabulary quiz Became more engaged in a lesson when provided visuals or hearing trigger words Eager to volunteer, especially in math	Responded in a reasonable timespan, especially with visual aids
Interactions with Classmates	N/A	Silent socialization	Easily interacted with one another. Would teach a peer if confused	Highly socially active	Worked comfortably & well with one another Communicated with one another in English	Happily & comfortably interacted with peers.	Good at taking turns with one another Friendly with peers

			Primarily used English; sometimes used heritage languages		Enjoyed volunteering to answer & remained thoroughly engaged throughout the lesson		Socialized in English Excited to share their academic knowledge Easily slipped into a focus mode when given individual work
Interactions with Teachers	Comfortable with teacher	Cordial with teacher	Comfortable and happy with teacher	Comfortable and socially active with teacher	Enjoy pleasing the teacher & participating	Comfortable with both the general education teacher and English-speaking assistant teacher	Comfortable; happy to talk about their day

In-Person and Online Interviews

In-person and online interviews were administered to teachers to gauge their perspective on English Learners and multilingual multicultural education. Three EL teachers were interviewed in person (the teachers of the EL-only classes that were observed). One teacher from Stoughton (Teacher A) was interviewed individually, while two teachers from Taunton (Teachers B and C) were interviewed as a pair. Three general education teachers responded to the online interview. Teachers D and E work in Stoughton, while Teacher F works in Taunton.

Stoughton Teacher In-Person Interview

Teacher A was an EL-only teacher who had been teaching for a total of 37 years. They began their career teaching deaf students in a bilingual and bicultural model (this lasted for 15 years). They have been teaching in their current school for 22 years now. They teach grades 1 through 5 and incorporate language objectives into their lessons of a variety of subjects (social studies, math, science, etc.). They have learned both American Sign Language (ASL) and French in a formal setting and Portuguese from working with Brazilian English Learners for over two decades. They found that having an acquisition of other languages allowed them to avoid viewing the world in an ethnocentric way. They feel their mind and heart are more open and that they are more appreciative of their abilities. They also have the perspective that if someone does not know English, it does not mean they are “stupid,” a perspective they believe many monolingual Americans have. They spoke in frustration regarding Americans’ fondness of multilingualism when English is the first language of the student, as opposed to the second or third.

Regarding their EL students, Teacher A observed that EL students are more social with their native English-speaking (NE) peers in elementary school; when they enter middle and high school they tend to cling with their own. Regarding students’ body language, they found that it varied on the culture of the student. For example, Brazilian students and parents are very open and comfortable with physical touch while Haitian students and parents are not as much. Comparatively, students are less open and talkative in their mixed classrooms compared to their EL classroom. Academically, there is a great deal of negotiation of meaning in the classroom. With one student, they found that they picked up a complex topic in a grammar lesson in 45 minutes. Teacher A also generally found that students can discuss high level and abstract topics even at WIDA Levels 1 and 2. Additionally, they emphasized the use of high-level vocabulary

with EL students because they would be more likely to understand. For example, it was better to use the word “comprehend” instead of “understand” with Spanish-speaking EL students because it is a cognate to the Spanish word “comprender.”

Teacher A strongly believed that children should be taught an additional language to their heritage one at a young age. They believe that learning an additional language reinforces the idea that other languages and cultures have value as well as provides better job prospects to the students when they are older.

Taunton Teacher In-Person Interviews

Teacher B is a teacher who both pulls EL students out of their general education classrooms and works with them in said classrooms. They have been teaching for four years total and have been teaching English as a Second Language (ESL) for two years. Their first two years, they taught first grade and Portuguese. In the elementary school currently, they teach grades one through four, all subjects but with an English Language Arts (ELA) focus. They grew up speaking Portuguese and English and learned Cape Verdean and Spanish informally. They understand the culture, community, and home life of Brazilian students due to their personal upbringing. They feel knowing language and culture gave them a deeper appreciation for minority populations and they were able to help their community more by knowing another language. Additionally, they feel more culturally aware because of their personal experiences.

Teacher C is a teacher who only pulls out EL students for EL-only classes. They have been teaching for eight years total and have always taught English to English Learners. They have taught and currently teach grades one through four, all subjects but with an English language arts (ELA) focus. One year they taught newcomer students as opposed to their usual EL

students. Teacher C learned Spanish formally and found it helped them empathize with their students as they learned firsthand how difficult it is to learn a language. They emphasized how much respect they have for people who have learned other languages, especially English Learners. They find their experience both learning languages and being a teacher for English Learners gave them a different mindset compared to the average American. They also have a value and appreciation for other languages and cultures and emphasize that it is not a bad thing if a person does not speak English.

Teachers B and C answered collaboratively regarding their experiences teaching English Learners. Socially, they found that EL students will automatically speak their heritage language with those who share the language, and they stay in groups. More novice ELs tend to rely on physical gestures and motions and are nervous to speak to other students. Sometimes, they will have something called a “silent period” where students simply do not speak at all for long periods of time. On the other hand, more advanced ELs interact easily with native and heritage English speakers. Academically, EL students generally are not as confident approaching assignments compared to native English-speaking students. Novice ELs tend to ask for help immediately with an assignment (either by going to each other or asking the teacher). They do not initially have a great deal of independence, although as they get stronger in their English skills, they adapt to the way NE students complete assignments. Both teachers established that there is a difference between students who are born here or coming here as newcomers (difference in assimilation). It is usually more difficult for younger newcomer students because they do not have much school experience generally. Older newcomer students tend to pick up the language quickly, potentially because they have social pressure to blend in.

Teachers B and C also answered collaboratively regarding their feelings on learning an additional language at a young age. They both believed that children should be taught an additional language to their heritage ones as early as possible. They believed it was the most valuable skill you can have and that the younger a person is, the easier it is to learn it. It provides more opportunities in life and is generally a great asset. It also makes people more culturally aware and opens one's perspective. They referenced research that says an acquisition of multiple languages makes the brain stronger and allows one to think more creatively. However, they did acknowledge that if the family does not speak the language being learned at home, it would take more time to acquire the language.

Stoughton Teacher Online Interviews

Teacher D is a general education teacher who has been teaching for 18 years and currently teaches grade 4, all subjects. In the past, they have taught all subjects in elementary school. Having taught EL students in their general education class before, they found that EL students enjoy giving small gifts to their peers and teachers. In their approach to academic topics, Teacher D found that if the topic related to something that student experienced in a different country, they might share the similarities and differences with the class. Teacher D did not have experience learning other languages and found their lack of acquisition of languages did not change their perception of teaching multilingual students, nor did it change the way they themselves learn and interact. However, they do believe children should be taught an additional language at a young age because it is easier to learn a language when one is younger.

Teacher E is a general education teacher who has been teaching for 34.5 years, and currently teaches grade 4, all subjects. In the past, they taught as a computer specialist in elementary schools. Having taught EL students, they found that some students express

themselves using physical cues as communication. They also found that EL students will sometimes use drawings to help their learning process, especially mathematics. In terms of language acquisition, Teacher E has learned French before. This definitively changed their perception of teaching multilingual students, as they commented, “[I] am constantly impressed and amazed at the ease with which my students acquire language and how challenging it was for me. I try very hard to have the utmost patience when I am teaching them.” However, they found their acquisition of languages did not change the way they themselves learn and interact. They displayed a strong desire that children should be taught an additional language at a young age as children show a wish to learn the language of their peers and to assimilate in the cultural environment they live in.

Taunton Online Teacher Interview

Teacher F is a general education teacher who has been teaching for 7 years and currently teaches grade 4, all subjects. They have not taught any other subjects or grades in the past. As someone who has had experience teaching English Learners, they found a difference in social interaction depending on the English Learner. If the student was a newcomer, they had fewer or more hesitant interactions with their NE peers. However, the teacher notes that in their current classroom, there is no difference between the social interactions of the EL student compared to their NE peers. Academically, Teacher F noted that writing and reading are more challenging topics for their EL student, specifically commenting on “a lack of focus or enjoyment or engagement in comparison to heritage English speakers.” They also noted that writing is much tougher for their EL student. Language-wise, Teacher F has learned Spanish and Italian in school. They have a slightly different perspective from their teaching peers because they studied Teaching English to Speakers of Other Languages (TESOL) for their master's degree. They

found it opened their eyes to the difficulty of learning the English language. It also gave them more patience and tolerance for their EL students. Regarding children learning an additional language at a young age, they believe “it would be so beneficial and interesting to have children learn more than one language.” They emphasize the usefulness of Portuguese given the district’s Brazilian population.

Summary of Interviews

According to teacher interviews, EL students may use more physical cues, although those of equivalent levels in their languages interacted at similar social-emotional levels to their native English-speaking peers, demonstrating similar social-emotional development. In terms of cognitive development, EL students generally struggle more with reading and writing and may use drawings to aid them in their learning process. Additionally, their academic confidence in the classroom tends to be lower than that of their native English-speaking peers.

Across the board, teachers who have worked with English Learners support multilingual learning at a young age. They mention the benefits of multilingualism and how it could aid their students, especially when speaking of integration of English Learners. They find the acquisition of a language that is popular in the community (such as Brazilian Portuguese) can help native/heritage English speakers better connect with their newcomer/EL peers. It also has cognitive benefits and creates better opportunities in the future. Teachers of English Learners specifically believe that multilingualism at a young age helps students develop cultural awareness/competence, as well as allows students to think more creatively.

DISCUSSION

Through these observations, there is a suggested correlation between learning an additional language at a young age and the physical and social-emotional development of the students observed.

How does the learning of a second language at a young age affect a student's social-emotional development as based on classroom observations and teacher interviews? Social-emotionally, in an EL-only environment, students who spoke the same native or heritage languages tended to interact with one another well, especially if most of the students had limited English. If all students had advanced English levels, they interacted with one another easily throughout the class period. They were good at taking turns with each other and would help one another out when one was struggling. EL students were especially close with those who spoke the same heritage or native language and shared the same culture as them, although this mattered less the more advanced the English level. Regardless of level, students felt comfortable expressing their feelings aloud and contributing to a conversation as much as possible.

In mixed EL and NE classrooms, advanced EL students interacted just as well and comfortably with their NE peers as with their EL peers, as reinforced by Akutina, S. & Akutina, A.'s research (2020). Novice EL students interacted better with the peers who spoke the same language as them as opposed to with their NE peers, although they were still fairly open for interaction in the mixed classroom.

In an EL-only classroom in a public school, EL students were clearly comfortable with their teacher(s). They displayed strong emotional bonds through physical and verbal affection (i.e., hugging, exclamations ("we missed you!")). Regarding participation in class, students were open and comfortable in contributing where they could. Usually, they were eager for their thoughts on the subject to be shared. They felt little to no fear participating in class, even if they

made a mistake. If they made mistakes, they easily accepted positive criticisms and corrections. The teacher(s) ensured respect among the students in the classroom, resulting in trust in the teachers. EL students had a great deal of social confidence when interacting with their EL teacher(s).

In mixed EL and NE classrooms, EL students were not as comfortable with their general education teacher, although they remained friendly and respectful. They accepted aid easily, some seeking it out more than their peers. Advanced ELs contributed about the same amount as their NE peers in class lessons and group activities. Novice ELs tended to be quieter and less animated in class compared to their NE peers. Some students were more distracted in their EL-only classrooms compared to their general education classrooms.

How does the learning of a second language at a young age affect a student's cognitive development as based on classroom observations and teacher interviews? Cognitively, students with more advanced English levels (meaning students with more equivalent capacities in the languages they hold) were alert and engaged with the lessons and were able to come to reasonable conclusions based on their own thinking processes. Students with novice English levels were more likely to appear bored or indifferent because of their lack of understanding. However, if they were engaged, they were able to make similar connections, they just were unable to articulate them in English. Students with more novice English levels would excitedly whisper the answer to their advanced English level classmates when the question was translated to them or when they observed something that made sense to them.

In the EL-only, STEM-focused environment, students with advanced levels of English tended to understand the concepts taught to them quickly. For example, there was an activity called CO₂ cars in which either cars of different mass and the same force (same CO₂ cartridges)

raced, or cars of the same mass and different force raced. Students had to guess which car would win before the cars raced. Students who understood the English descriptions were able to piece together how mass and force affected speed after two or three car races, displaying quick cognitive connections and flexibility (Marcecova et al., 2013) based solely on observations.

Generally, students with novice levels of English took more time to understand the directions given to them when doing different tasks. However, once they understood the activity they were to complete, they fully devoted their attention to it, working excitedly with their classmates or deeply focusing on the task. They were more involved in group activities if their fellow students spoke the same heritage/native language, as opposed to if they did not.

In EL-only classrooms, students displayed strong cognitive skills. Advanced ELs had displayed clear memory of information from lessons earlier in the week (Marini et al., 2019) and effective reading skills. They also thought critically about the lessons and asked clarifying questions when confused. They were additionally creative in arguing the validity of their answers when given the opportunity. Students remained well-engaged throughout the lesson; all levels were typically eager to learn.

In mixed EL and NE classrooms, EL students displayed cognitive skills equivalent to their NE peers. In ELA lessons, advanced ELs read along at the same rate as their NE peers while novice ELs struggled a little but kept up. EL students tended to be better at math than any other subject, evidenced by their responses to class questions, individual work, and teacher perspectives. Individual tasks were completed at approximately the same rate as their NE peers, and technology was an enormous aid if it was used in the classroom. Additionally, visuals or recognizable “trigger words” (football, TV, etc.) better helped an EL student engage in a lesson if they were not as engaged prior.

How prepared or willing are teachers to work with multilingual students?

Overwhelmingly, teachers who work with English Learners in any capacity believe students should learn an additional language to their heritage/native one at a young age. The teachers themselves primarily learned their languages in academic settings, languages they do not speak comfortably in their daily life, so they often note no difference in their personal view of the world. They do note that learning an additional language is difficult and it helps them be more patient with their students. They do not note significant differences in the students' social-emotional or cognitive development compared to their peers besides novice ELs using less verbal language initially and general ELs benefiting more from imagery in lessons.

Limitations

This research was not controlled in any way (it consisted solely of qualitative data), so it is difficult to articulate causation of one behavior or another. Additionally, there are a variety of affecting factors, including age, socioeconomic status, years of schooling, and other social variables (experiences in school, home environment, personal background, etc.). These factors also could not be controlled for and thus must be taken into consideration with the results.

CONCLUSION

The observations conducted line up with previous literature, which indicates that multilingual students with relatively equivalent capacities in their languages are social-emotionally advanced and make cognitive connections easily as compared to monolingual students (Dewaele & Wei, 2012; Kroll et al., 2012; Kwon et al., 2021; Morales et al., 2013). However, it works against some conclusions by previous literature. Dewaele (2019)'s conclusion

that there is no correlation between multilingualism and higher levels of emotional intelligence is disrupted by the more advanced displays of social-emotional intelligence by the EL students observed. The observations and interviews conducted emphasize the benefits of balanced language capabilities on social-emotional and cognitive development in children.

Students with equivalent capabilities in their languages easily interacted with peers and with teachers, sometimes in multiple languages. Their cultural backgrounds, which were directly tied to their heritage/native language(s), allowed them to interact in a different way than a born and raised English-speaking student would. However, students with more novice capabilities in speaking English struggled to be as socially interactive and would get frustrated more easily as a result of their lack of understanding.

Students with equivalent capabilities in their languages were faster to grasp concepts or ideas and articulate them than students with novice English levels were. However, given more time and more visuals (more aid), students with novice English levels clearly understood the concepts being articulated. Additionally, some students with more novice levels of speaking or listening comprehension in English proved to have good writing skills, thus allowing them to demonstrate their knowledge in another format.

In accordance with the data collected, English Learners are, at minimum, on par with their native English-speaking peers both social-emotionally and cognitively. Thus, learning an additional language at a young age is not detrimental in any manner to children, and could be implemented in elementary schools with only benefits to be gained.

If a student has a similar level of skill in all their acquired languages, they are likely to experience the most benefits that multilingualism has to offer. This includes enhancement in

executive function, working memory, greater creativity skills, and a good use of metalinguistics. They also show greater social-cultural awareness because of their upbringing (usually a multicultural household in addition to being multilingual). Therefore, data collected suggests a correlation between acquisition of multiple languages and high social-emotional and cognitive engagement in the classroom.

APPENDIX A

Observation Guide

These are the questions used to guide general observations, in addition to keeping the research questions in mind.

- How much time does it take for students to respond to questions (taking into account students' English levels)?
- How do students interact with classmates (socially and academically)?
- How do students interact with teachers (socially and academically)?
- Do students primarily express feelings aloud? Do they primarily express their feelings in expressions and body language?
- What facial expressions do they use to express emotion? Do they rely on facial expressions more than heritage-speaking students?
- What physical reactions do students display while learning?
- Do they use physical gestures often (hands, shrugging, etc.)?
- What is their talk to listen ratio?
- What cultures do students come from? How does this affect their participation in class and their social interactions?

APPENDIX B

Interview Questions

These are the questions that were asked to teachers in the in-person interview as well as listed in the online interview teachers had the choice to fill out.

- How long have you been teaching?
- What subject(s)/grade(s) do you teach currently?
- What subject(s)/grade(s) have you taught in the past?
- Have you had experience teaching English Learners? If yes...
 - Do you find they have different ways of interacting socially than heritage English speakers?
 - For example, do they primarily express their feelings in expressions and body language or aloud?
 - Do you find they have different ways of approaching academic topics than heritage English speakers?
- Do you have experience learning other languages? If so...
 - Which ones?
 - Has it changed your perception of teaching multilingual students?
 - Has it changed the way you yourself learn and interact?
- Do you think children should be taught an additional language to their heritage one at a young age? Why?

APPENDIX C

WIDA Levels

WIDA (World – Class instructional Design and Assessment) is a group of states who assess English Learners' English levels for the purpose of educating them with better tools. There are six different WIDA levels: 1 (Entering), 2 (Beginning), 3 (Developing), 4 (Expanding), 5 (Bridging), and 6 (Reaching) (Cammilleri et al., 2009). Once the student has exited stage 6, they are no longer considered an English Learner by the school as they are at the same English level as their heritage English-speaking classmates. The schools that were involved in these observations had WIDA levels from 1 to 5 depending on the school, although not all students or classrooms observed were identified with their specific WIDA levels. Instead, they may be identified as lower, mid-, or high levels, as described by the English Learner teachers.

“Lower level” (LL) are approximately levels 1 and 2

“Medium level” (mid-level) is approximately level 3

“Higher level” (HL) are approximately levels 4 and 5

APPENDIX D**Native English-Speaking (NE)**

Student who has grown up speaking English their entire life in a country that has English as a dominant language (in this case, referring to a student who was raised most of their life in the United States speaking English).

APPENDIX E**English Learner (EL)**

Student who is not yet fluent in English and is learning it as an additional language to their heritage or native one(s).

APPENDIX F

Newcomer

A student who has recently arrived to the United States from another country.

References

- Akutina, S. & Akutina, A. (2020). Problems in Collaboration between Multilingual Children with Teachers in the Italian Republic. *ARPHA Proceedings*, 3, 45-58. IFTE-2020,0045-0058. doi:10.3897/ap.2.e0045
- Alladi, S., Bak, T. H., Duggirala, V., Surampudi, B., Shailaja, M., Shukla, A.K., ... Kaul, S., (2013). Bilingualism delays age at onset of dementia, independent of education and immigration status. *Neurology*, 81.
- Baker, C. (2010). Bilingual Education. *Oxford Handbooks*. DOI: 10.1093/oxfordhb/9780195384253.013.0020
- Belsky, J., & Fearon, R. (2002). Infant–mother attachment security, contextual risk, and early development: A moderational analysis. *Development and Psychopathology*, 14(2), 293-310. doi:10.1017/S0954579402002067
- Bialystok, E. & Martin, M. (2004). Attention and inhibition in bilingual children: evidence from the dimensional change card sort task. *Developmental Science*, 7(3), 325-339.
<https://doi.org/10.1111/j.1467-7687.2004.00351.x>
- Bialystok, E. (2001). Bilingualism in Development. *Cambridge University Press*.
- Bialystok, E., & Barac, R. (2012). Emerging bilingualism: Dissociating advantages for metalinguistic awareness and executive control. *Cognition*, 122, 67–73.
<http://dx.doi.org/10.1016/j.cognition.2011.08.003>

- Bien-Miller, L., Akbulut, M., Wildemann, A., & Reich, H. H. (2017). The relationship between bilingualism and metalinguistic awareness in primary school children. *Zeitschrift Fur Erziehungswissenschaft*, 20(2), 193–211.
- Cammilleri, A., Cranley, M., Gottlieb, M. (2009). Understanding the WIDA English Language Proficiency Standards – A Resource Guide. *Board of Regents of the University of Wisconsin*.
- Cognitive Development Domain. (2021). *California Department of Education*.
<https://www.cde.ca.gov/sp/cd/re/itf09cogdev.asp>
- Cohen, J., Onunaku, N., Clothier, S., Poppe, J. (2005). Helping Young Children Succeed. *National Conference of State Legislatures*.
- Comeau, L., ,Genesee, F., Mendelson, M. (2005). Bilingual children's repairs of breakdowns in communication. *Journal of Children's Language*, 34(1), 159-174.
doi:10.1017/S0305000906007690
- Daller, M., & Ongun, Z. (2018). The Threshold Hypothesis revisited: Bilingual lexical knowledge and non-verbal IQ development. *International Journal of Bilingualism*, 22(6), 675–694.
- Devlin, K. (2018). Most European students are learning a foreign language in school while Americans lag. *Pew Research Center*. <https://www.pewresearch.org/fact-tank/2018/08/06/most-european-students-are-learning-a-foreign-language-in-school-while-americans-lag/>

- Dewaele, J. & van Oudenhoven, J. (2009). The effect of multilingualism/multiculturalism on personality: no gain without pain for Third Culture Kids? *International Journal of Multilingualism*, 6(4), 443-459. DOI: 10.1080/14790710903039906
- Dewaele, J. & Wei, L. (2012). Multilingualism, empathy and multicompetence. *International Journal of Multilingualism*, 9(4), 352-366. DOI: 10.1080/14790718.2012.714380
- Dewaele, J. (2015). Bilingualism and Multilingualism. *The International Encyclopedia of Language and Social Interaction*. DOI: 10.1002/9781118611463/wbielsi108
- Dewaele, J. (2019). Multilingualism and trait emotional intelligence: an exploratory investigation. *International Journal of Multilingualism*, 18(3), 337-351. DOI: 10.1080/14790718.2019.1571065
- Diaz, R. (1985). Bilingual Cognitive Development: Addressing Three Gaps in Current Research. *Wiley on behalf of the Society for Research in Child Development*.
<https://www.jstor.org/stable/1130458>
- Diebold, R. (1966). *The Consequences of Early Bilingualism in Cognitive Development and Personality Formation*. Stanford University.
- Duff, P. (2019). Social Dimensions and Processes in Second Language Acquisition: Multilingual Socialization in Transnational Contexts. *The Modern Language Journal*, 103(1).
<https://doi.org/10.1111/modl.12534>
- Fan SP, Liberman Z, Keysar B, Kinzler KD. (2015). The Exposure Advantage: Early Exposure to a Multilingual Environment Promotes Effective Communication. *Psychological Science in the Public Interest*, 26(7), 1090-1097. doi: 10.1177/0956797615574699.

- Finn, A., Kraft, M., West, M., Leonard, J., Bish, C., Martin, R., Sheridan, M., Gabrieli, C., Gabrieli, J. (2014). Cognitive Skills, Student Achievement Tests, and Schools. *National Library of Medicine*. doi: 10.1177/0956797613516008
- Fox, R., Corretjer, O., Webb, K. (2019). Benefits of foreign language learning and bilingualism: An analysis of published empirical research 2012–2019. *Foreign Language Annals*. doi:10.1111/flan.12424
- Fürst, G., & Grin, F. (2018). Multilingualism and creativity: A multivariate approach. *Journal of Multilingual and Multicultural Development*, 39(4), 341–355
- Galante, A. (2021). Affordances of Plurilingual Instruction in Higher Education: A Mixed Methods Study with a Quasi-experiment in an English Language Program. *Applied Linguistics*, 43(2), 316–339. <https://doi.org/10.1093/applin/amab044>
- Garcia-Vazquez, E., Turrero-García, M., Rodriguez, N. (2021). Multilingualism enhances immigration acceptance through increased intergroup quality contact: A proof of concept in New Jersey and Spain. *ScienceDirect*, 273. <https://doi.org/10.1016/j.lingua.2022.103320>
- Genesee, F. in Dewaele, J., Housen, A., & Wei, L. (eds.), *Bilingualism: Beyond Basic Principles: Festschrift in Honour of Hugo Baetens-Beardsmore*, Chapter 10 (pp 158-182). Clevedon, Eng.:Multilingual Matters, 2002.
- Genesee, F., & Nicoladis, E. (2006). *Bilingual acquisition*. In E. Hoff & M. Shatz (eds.), *Handbook of Language Development*, Oxford, Eng.: Blackwell.

- Greenberg, A., Bellana, B., Bialystok, E. (2012). Perspective-taking ability in bilingual children: Extending advantages in executive control to spatial reasoning. *ScienceDirect*, 28(1).
<https://doi.org/10.1016/j.cogdev.2012.10.002>
- Hack, E., Dubin, J., Fernandes, M., Costa, S., & Tyas, S. (2019). Multilingualism and Dementia Risk: Longitudinal Analysis of the Nun Study. *Journal of Alzheimer's Disease*, 71(1), pp. 201-212. DOI: 10.3233/JAD-181302
- Halle, T. G., Vick Whittaker, J., Zepeda, M., Rothenberg, L., Anderson, R., Daneri, P.,....Buysse, V. (2014). The social-emotional development of dual language learners: Looking back at existing research and moving forward with purpose. *Early Childhood Research Quarterly*, 29, 734-749.
- Ianco-Worrall, A. (1972). Bilingualism and Cognitive Development. *Child Development*, 43(4).
<https://www.jstor.org/stable/1127524>
- Ingle, J. (2021). *Intentional Inclusion: Learning from Toronto's Success*. IGI Global. doi: 10.4018/978-1-7998-8025-7.ch001
- Kaveh, Y. & Lenz, A. (2021) "I'm embarrassed and scared to speak a different language": The complex language beliefs and emotions of bi/multilingual children of immigrants in monolingual U.S. schools. *Journal of Multilingual and Multicultural Development*, DOI: 10.1080/01434632.2022.2062367
- King, J., Chetty, R. (2013). Codeswitching: Linguistic and literacy understanding of teaching dilemmas in multilingual classrooms. *ScienceDirect*, 25.
<https://doi.org/10.1016/j.linged.2013.12.002>

- Kroll, J.F., Dussias, P.E., Bogulski, C.A., Kroff, J. R. V. (2012). "Juggling two languages in one mind. What bilinguals tell us about language processing and its consequences for cognition" *Psychology of Learning and Motivation*, 56.
- Kwon, Y., Yoo, K., Nguyen, H., Chun, M. (2021). Predicting multilingual effects on executive function and individual connectomes in children: An ABCD study. *PNAS*, 118(49).
<https://doi.org/10.1073/pnas.2110811118>
- Langeloo, A., Lara, M., Deunk, N., Strijbos, J. (2019). A Systematic Review of Teacher-Child Interactions With Multilingual Young Children. *Sage Journals*, 89(4).
<https://doi.org/10.3102%2F0034654319855619>
- Mabule, D.R. (2015). What is this? Is it Code Switching, Code Mixing, or Language Alternating? *MC SER Publishing*, 5(1).
- Marini, A., Sperindè, P., Ruta, I., Savegnago, C., & Avanzini, F. (2019). Linguistic Skills in Bilingual Children With Developmental Language Disorders: A Pilot Study. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2019.00493>
- Marzecová, A., Asanowicz, D., Krivá, L., & Wodniecka, Z. (2013). The effects of bilingualism on efficiency and lateralization of attentional networks. *Bilingualism: Language and Cognition*, 16(3), 608-623. doi:10.1017/s1366728912000569
- McLeod, S., Harrison, L., Whiteford, C., Walker, S. (2015). Multilingualism and speech-language competence in early childhood: Impact on academic and social-emotional outcomes at school. *ScienceDirect*, 34, 53-66.
<https://doi.org/10.1016/j.ecresq.2015.08.005>

- Mitchell, K. (2013). Race, difference, meritocracy, and English: Majoritarian stories in the education of secondary multilingual learners. *Race, Ethnicity, and Education*, 16(3), 339–364. <https://doi.org/10.1080/13613324.2011.645569>
- Morales, J., Calvo, A., Bialystok, E. (2013). Working memory development in monolingual and bilingual children. *J. Exp. Child Psychol*, 114, 187–202.
- Oades-Sese, G. V., & Li, Y. (2011). Attachment relationships as predictors of language skills for an at-risk bilingual preschool children. *Psychology in Schools*, 48(7), 707–722. <http://dx.doi.org/10.1002/pits.20583>
- Park, M., O’Toole, A., Katsiaficas, C. (2018, February 22). Dual Language Learners: A National Demographic and Policy Profile. *Migration Policy Institute*. <https://www.migrationpolicy.org/research/dual-language-learners-national-demographic-and-policy-profile>
- Peal, E., & Lambert, W. E. (1962). The relation of bilingualism to intelligence. *Psychological Monographs: General and Applied*, 76(27), 1–23. <https://doi.org/10.1037/h0093840>
- Polinsky, M. (2018). *Heritage Languages and Their Speakers*. Cambridge University Press.
- Potowski, K. (2019). *Heritage speakers 9-12* [Powerpoint slides]. Department of Hispanic and Italian Studies, University of Illinois at Chicago. <http://www.teachingforbilitery.com/wp-content/uploads/2018/04/Dr.-Kim-Potowski-April-28-2018-Spanish-literacy-in-middle-and-high-school.ppt-1.pdf>

- Rezaei, A., & Hashim, F. (2014). Multilinguals' and monolinguals' use of awareness-raising activities: A study on reflective/impulsive learners. *Journal of Applied Linguistics and Professional Practice*, 11(1), 72–88
- Smith, A. (2006). Cognitive Empathy and Emotional Empathy in Human Behavior and Evolution. *The Psychological Record*, 56, 3–21. <https://doi.org/10.1007/BF03395534>
- Tenenbaum, H. R., & Ruck, M. D. (2007). Are teachers' expectations different for racial minority than for European American students? A meta-analysis. *Journal of Educational Psychology*, 99(2), 253–273. <https://doi.org/10.1037/0022-0663.99.2.253>
- Thomas-Sunesson, D., Hakuta, K., & Bialystok, E. (2018). Degree of bilingualism modifies executive control in Hispanic children in the USA. *International Journal of Bilingual Education and Bilingualism*, 21(2), 197–206. <https://doi.org/10.1080/13670050.2016.1148114>
- Veenstra, R. & Kuyper, H. (2004). Effective Students and Families: The Importance of Individual Characteristics for Achievement in High School. *Educational Research and Evaluation*. 10:1, 41-70, DOI: 10.1076/edre.10.1.41.26302
- Viesca, K. & Teemant, A. (2019). Preparing Content Teachers to Work with Multilingual Students. *Faculty Publications: Department of Teaching, Learning, and Teacher Education*. 332. <https://digitalcommons.unl.edu/teachlearnfacpub/332>