Undergraduate Review

Volume 17 Article 12

2023

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

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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 this practice is growing, and there is increased awareness of cultural competence in teaching languages. This study aimed 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). Additional observations were conducted of third, fourth, and fifth-grade English Learner students and heritage speakers in two public schools for 18 hours. These IRB-approved structured observations were conducted with guiding questions to ensure that data collection was relevant to the research. These additional observations were supplemented by interviews of English Learners and General Education teachers, who emphasized the importance of multiple language acquisition at a young age. Students with equivalent capabilities in their languages were faster than their peers to grasp concepts or ideas and articulate them and tended to be more confident and engaged in the classroom. These observations, interviews, and prior research suggest a correlation between acquiring multiple languages and high social-emotional and cognitive engagement in the classroom.

Multilingualism is a term used to describe a situation where two or more languages are used. This paper's 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, children who learn multiple languages in school, or Dual Language Learners (DLLs). 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 lives. 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 lives (Polinsky, 2018).

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). In addition to better executive function and working memory, bilingual children have better inhibitory control (the ability to suppress responses to stimuli) than monolingual children (Bialystok & Martin, 2004). They demonstrate superior flexibility in cognitive thinking due to the acquisition of multiple languages (Marzecová 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). Because multilingual children use different languages constantly, they unintentionally become more cognizant of metalinguistics. Additionally, from an early age, bilingual learners know when to code-switch and when to use each language individually, given cues from people around them.

Multilingual children tend to have greater empathy due to their acquisition of multiple languages and, thus also, cultures. 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. However, depending on their environment, multilingual children may have a more negative emotional development depending on their immigrant status and their control over their other languages. Regardless, different languages make individuals more aware of cultural impacts because social factors and location shape personality. Additionally, if the environment actively involves multilingual learning, there is a greater chance of positive social-emotional experiences and, thus, development.

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.

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 influence their students positively. 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).

Research Methodology

Method

This research collected and analyzed 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 STEM Program, the observer was directly involved with the students being observed as an assistant teacher. 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 with English Learner (EL) teachers, and online interviews with general education teachers. Three different schools/programs were observed in the collection of this data.

The STEM Program occurred 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 for 35 hours.

For 18 hours, a mix of EL-only and mixed EL and heritage speaker classrooms were observed between the two elementary schools. Both 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. School 1 students were observed for eight hours over three days. School 2 students were observed for 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 with general education teachers were conducted in public elementary schools in the towns of Schools 1 and 2.

The chosen students needed to fit the following criteria: they were classified as English Learners by the state school system and 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 School 1 and one from School 2. The teachers interviewed online were general education teachers with experience with English Learners in their classroom for at least one year. There were three total, one from School 1 and two from School 2.

In the STEM 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 had a variety of speakers, and the third group was 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 School 1, most EL students were Brazilian, although many students from other countries were also there. In School 2, 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?

Regarding the STEM Program, only one data collection method was used: classroom observations. During the week the researcher was an assistant teacher at the STEM Program, 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' interactions with the students. She took detailed notes of her observations 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 with EL teachers. Observations focused on verbal and nonverbal reactions to learning new subjects in the EL students' non-heritage languages 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. Some outside factors were considered when analyzing. For example, for Group C of the STEM Program, the researcher played the role of 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 data form is considered in its analysis.

Results

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

STEM Program Observation Data

At the STEM program, 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. All levels (which will be referred to only as their level number) were assessed according to WIDA levels. 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).

	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

STEM Program

Social-Emotional Development

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 used language heritage speakers use such as "like..." or "um..." They also used slang phrases from American cultures, such as "big boy," "sheeeeeeee," and "that's Janet's 'tea'." 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 occasionally picked up on and clarified. Some students would raise their hands, but it was uncommon. Group B students would socially interact using Mandarin if that were the stronger language to facilitate understanding best.

In Group C, there was most students with levels 1 and 2 (EEs), with a few exceptions 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). 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, and becoming more excited to do the activity that was translated as opposed to all others.

Cognitive Development

Group A 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. They were consistently engaged with the teachers and assistant teachers and enjoyed volunteering answers as prompted.

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 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. 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 most EEs unless they contained visuals that helped students follow along.

In Group C, better English speakers among the students would translate for their EE classmates during times of instruction or activities, 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).

Interactions with Teachers

There were high levels of interaction between the Group A students and the teachers. However, if students' cultures were mentioned, students would correct one another about cultural differences, 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. It also created an opportunity for conversation and connection between students and teachers.

Groups B and C had more limited interactions with teachers and assistant teachers, especially if their English levels were lower. However, when prompted, they enjoyed sharing words and phrases from their cultures with the assistant teachers as it showed them that the teachers themselves were willing to learn parts of another language.

Schools 1 and 2

In Schools 1 and 2, 15 groups were observed, although all mixed classrooms included students 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 School 1 students are referred to as high-level (HL), mid-level (ML), or low-level (LL), and EL School 2 students will be referred to by 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 daily 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. School 1 had eight groups (groups 1 through 5A) observed for eight hours. School 2 had seven groups (groups 6 through 9) observed for ten hours.

	Group 1	Group 1A	Group 2	Group 2A
Level(s), Grade(s), & Languages	HL & MLs 3rd grade	Group 1 & native Englishspeaking students	HL & MLs in EL-only classrooms	Group 2 & native English speaking students
Engagement	HL & MLs understood questions easily & gave rapid responses Showcased abilities to read effectively	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
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
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

School 1 Observation Data

Social-Emotional Development

Group 1 students were generally excited to contribute, both in personal stories and academic settings. They primarily expressed their feelings aloud and spoke as often as they could. Even so, they were good at taking turns with one another. In Group 1A, EL students initially hesitated to participate but were willing to volunteer when encouraged. When partnered up or in groups, they worked well with classmates academically and socially (used math blocks together or excitedly interacted during coloring time).

Group 2 was a combination of two usually separate groups (and their EL teachers) working on a group project together. Students sometimes answered prompts in their heritage language and had the answer translated for them. 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. Students readily accepted help and asked for it when they needed it. In academic settings, students felt comfortable taking their time reading and pronouncing. In Group 2A, EL students communicated with one another in English and interacted with their NE classmates easily; for example, one showed an NE classmate how to do a part of a project on which the student needed clarification.

Group 3 consisted of high and mid-level English learners with Individualized Education Programs (IEPs), so their English levels were high, and their general academic achievement was low. The students were eager to participate throughout the lesson; they would volunteer immediately before the beginning of a review card game. 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).

Group 4 students had various completion times for group assignments (one group finished very quickly, one took a medium amount of time, and one took an extended amount of time). Students worked well in pairs (if they were part of the same culture, they discussed answers in their native languages; if not, they discussed in English).

Group 5 students were comfortable with one another and socialized in English. When placed in a general education classroom (Group 5A), they tended to continue socializing with other EL students instead of their NE peers.

Cognitive Development

During the lesson, Group 1 students 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. In Group 1A, HLs could read along at the same rate as their NE peers, while LLs struggled 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 students often participated, even if the answer they had needed to be corrected. Their clarifying questions lent insight into how they interpreted the lesson and allowed the teacher to adapt to better suit their line of thinking. In Group 2A, some EL students struggled with the independent work assigned to them, while others did well with it (this was similar to their NE peers).

Group 3 students benefited greatly from the mixture of IEP and English Learner aids; the combination allowed them to focus better and decrease academic frustration.

Group 4 students were very creative in defending their answers to ensure they got points in a review game. For example, students were asked to list four slow things, 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 students took the average amount of time to come up with answers compared to one another. 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. In Group 5A, EL students responded to questions easily and at the same speed as their NE classmates. During a

	Group 6	Group 6A	Group 7
Level(s), Grade(s), & Languages	5th grade level 1/2 student Brazilian Portuguese newcomer	Group 6, a level 3/4, & native English-speaking peer	4th & 5th grade Levels 3 and 4
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
Interactions with Classmates	N/A	Silent socialization	Easily interacted with one another. Would teach a peer if confused Primarily used English; sometimes used heritage languages
Interactions with Teachers	Comfortable with teacher	Cordial with teacher	Comfortable and happy with teacher

School 2 Observation Data

math lesson, when students were asked to show "5+1" on their fingers, one EL student showed three fingers on one hand and three on the other. The EL students generally appeared to pick up the lesson at the same time as most of their NE peers.

Interactions with Teachers

When interacting with the general education teacher, Group 1A students accepted aid readily and showed the same air of respect that NE students showed.

Positive feedback from the teachers in Group 2 created trust, and respect was earned on both sides (teachers ensured students did not make fun of one another's pronunciation). In Group 2A, EL students had no issues asking for help from the teacher, but they were not as familiar with them as their EL teacher. Because students constantly asked the teacher for help, it implied they were unsure about doing any work independently.

Group 7A	Group 8	Group 8A	Group 9
Level 3/4 student from Group 7 & native English-speaking peers 4th grade general education classroom	3rd & 4th grade Levels 3 and 4	Level 3/4 student from Group 8 & native English-speaking peers	2nd & 3rd grade Levels 2 and 3
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
Highly socially active	Worked comfortably & well with one another Communicated with one another in English Enjoyed volunteering to answer & remained thoroughly engaged throughout the lesson	Happily & comfortably interacted with peers.	Good at taking turns with one another Friendly `with peers Socialized in English Excited to share their academic knowledge Easily slipped into a focus mode when given individual work
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

School 2 Observation Data

On the other hand, one EL student's work was shown as an example to the class, and they were very proud to have been chosen. This same student proved to be less focused in the EL class than in the mixed class.

Group 3 students were happy and comfortable with the teachers; they displayed total trust and confidence in them. Group 4 students were socially confident enough that they were willing to argue the validity of their answers to the teacher.

Group 5 students were also very comfortable interacting with the teacher; they hugged them when they were pulled out of their general education classroom. In Group 5A, they appeared significantly more comfortable with the EL teacher in the classroom with them. In the classroom, EL students seemed to be much quieter than other NE students and did not appear to actively engage with the story being read by the teacher (although neither did the majority of their peers).

Social-Emotional Development

Group 6 consisted of one fifth-grade level 1/2 (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 were very open in sharing their emotions, thoughts, and feelings through facial expressions, physical gestures, and verbalizations. In Group 6A's class, both EL students appeared to show confusion or distraction by putting their hands on their heads, fidgeting, and looking around. However, they verbally asked for elaboration on a topic or word in addition to using facial expressions.

When expressing emotion, Group 7 English Learners with more advanced English tended to rely on facial expressions more than their less advanced English Learner peers. In Group 7A, the EL student was highly socially active with no visible hesitation to interact with their peers.

Group 8 students took turns well and supported one another when a student contributed the correct answer (for example, one student clapped when this occurred). 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. In Group 8A, the EL student happily and comfortably interacted with their peers. They were helpful to their classmates (i.e., they picked up a peer's earbuds when they dropped them, and brought a classmate their lunchbox and water).

Group 9 students took turns well with each other and were, at minimum, friendly with everyone in the class. They spoke to one another in English and shared energy levels. Even when they were having trouble reading, they were not embarrassed, nor did they mind corrections.

Cognitive Development

The Group 6 student was eager to learn. They took criticism easily and corrected themself when the teacher corrected them. During the lesson, they contributed additional thoughts confidently and easily and were unafraid to sound out words or speak, even if they lacked words. While in Group 6A's classroom, the high use of technology allowed for individual tasks, thus greatly aiding the EL students. However, the level 1/2 (EE) student did not fully understand verbal instructions without accompanying visuals (seen through the exit

ticket made by the general education teacher).

Group 7 students did not require much time to process and respond to questions prompted to them. A combination of languages was used in the classroom to help the less advanced EL students, as was a mix of technology. In Group 7A, the EL student engaged with the lesson as much as any other native English-speaking student. They took the same amount of time as any other student to answer questions and appeared to take instructions easily without confusion in their listening skills. Reading was a more difficult subject for them compared to math.

Group 8 students were highly engaged with the lesson, often jumping in to contribute their thinking or to elaborate on something presented. In Group 8A, while taking a vocabulary quiz, the EL student could begin before reading 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 students academically responded within a reasonable amount of time, especially when given visuals. Academically, they were excited to share the knowledge they had. When they were given an online assignment and a book, they easily slipped into focus mode, allowing them to work independently of one another.

Interactions with Teachers

The Group 6 student was extremely familiar with the teacher and had complete trust in them. They benefited well from positive reinforcement but were also heavily intrinsically motivated. Group 6A EL students responded quickly when working with the teacher one-on-one. The EL students felt comfortable, if more cordial, working with their teacher; they were eager to learn and willing to take all constructive criticism and advice.

Group 7 students enjoyed pleasing the teacher and felt comfortable in the classroom. They did not hesitate to ask questions that came to mind that were accepted and expanded upon. Aid from the teacher was readily 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). In Group 7A, the EL student had the same type of social-emotional interactions with their teacher and NE peers.

Group 8 students enjoyed pleasing the teacher and participating; they felt comfortable contributing in class and asking clarifying questions. In Group 8A, the student appeared happy interacting with the general education teacher and the assistant teacher in the classroom.

Group 9 students were generally comfortable with the teacher and often wished to take time before or during class to talk about their day or something they discovered recently.

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 observed EL-only classes). Three general education

teachers responded to the online interview.

Summary of Interviews

According to teacher interviews, EL students may use more physical cues. However, those of equivalent levels in their languages interacted at similar social-emotional levels to their native English-speaking peers, demonstrating similar social-emotional development. Regarding 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 the integration of English Learners. They find that acquiring a language prevalent 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.

Limitations

This research was not controlled in any way (it consisted solely of qualitative data), so it is difficult to articulate the causation of one behavior or another. Additionally, there are various affective 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 considered 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 from previous literature. Dewaele's (2019) 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 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 teachers, sometimes in multiple languages. Their cultural backgrounds, which were directly tied to their heritage/native language(s), allowed them to interact differently 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 quickly due to their lack of understanding. With teacher(s), EL students with equivalent capabilities in their languages remained comfortable, friendly, and respectful. They contributed a similar amount as their NE peers in-class lessons and

group activities and were comfortable accepting positive criticisms and corrections.

Students with equivalent capabilities in their languages were alert and engaged with the lessons and could come to reasonable conclusions based on their thinking processes. Students with novice English levels were likelier to appear bored or indifferent because of their lack of understanding. However, if they were engaged, they could make similar connections; they just could not 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, or they observed something that made sense. Additionally, some students with more novice speaking or listening comprehension levels in English proved to have more advanced writing skills, thus allowing them to demonstrate their knowledge in another format. In the EL-only, STEM-focused environment, students with advanced levels of English tended to understand the concepts taught to them quickly, displaying quick cognitive connections and flexibility (Marzecová et al., 2013) based solely on observations. Advanced EL students showed cognitive skills equivalent to their NE peers in mixed EL and NE classrooms. However, they tended to perform better in math than any other subject, evidenced by their responses to class questions, individual work, and teacher perspectives. Novice ELs displayed solid cognitive skills and engagement levels in EL-only classrooms, including critical thinking and clarifying questions.

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 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 helps them be more patient with their students. They do not report 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.

Per 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.

A student with a similar level of skill in all their acquired languages will likely experience the most benefits that multilingualism offers. This includes enhancement in executive function, working memory, greater creativity skills, and 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, the data collected suggests a correlation between acquiring multiple languages and high social-emotional and cognitive engagement in the classroom.

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