

The Perceived Metalinguistic and Cognitive Influences of Bilingual Education

GATESOL Journal
2021, Vol. 31(1), pp. 3–16
doi:10.52242/gatesol.120
ISSN: 2331-6845

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Abstract

Despite the substantial body of academic research regarding the metalinguistic and cognitive effects of bilingual education, most of the literature reports on large-scale experimental studies (e.g., Bialystok et al., 2010) while little is known about how individuals who have participated in bilingual programs view their learning outcomes. The objective of this study was to investigate whether there are trends in the self-perceived outcomes of bilingual immersion education on people who have spent at least four years in a bilingual educational setting. Ten individuals who met this criterion were interviewed and the audio recordings of their interviews were transcribed and analyzed inductively to allow themes to emerge from the participants' words. Findings indicate there were identifiable themes in how participants perceived their education and the amount of time and specific grade levels spent in bilingual programs tended to correspond with certain participant response patterns. This study has implications for the many emerging Georgia dual language immersion programs and their recruitment strategies.

Keywords

bilingual education, dual language immersion, metalinguistic ability, cognitive ability

Introduction

In the past decade or so, there has been a growing number of dual language programs in Georgia. According to a 2014 article in the *Atlanta Journal Constitution* (Farlow, 2014), the then-Georgia State Superintendent set a goal of having 20 dual language immersion (DLI) programs in Georgia public schools by 2020—a goal that has now been surpassed, with over 70 DLI schools listed on the Georgia Department of Education (2021) website. The push for bilingual immersion programs has been largely motivated by economic factors, as there are tens of thousands of Georgians who are employed by the many foreign companies that have put down roots in the state (Broady, 2019). Besides an economic advantage, bilingual immersion education, henceforth referred to as *bilingual education*, has been shown to promote the development of metalinguistic and cognitive abilities (e.g., Friesen & Bialystok, 2012; Mustard, 2010). Despite the evidence suggesting this type of education has generally positive effects beyond language development (Bialystok et al., 2010), little is known about how individuals who have participated in bilingual programs view their learning outcomes. Simply engaging in an academic program that purportedly has certain effects

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does not guarantee one recognizes the manifestation of those effects in oneself. Consequently, there may be a discrepancy between research findings from large-scale quantitative studies on the effects of bilingual education and individuals' perception of the outcomes of their personal experiences. The objective of this study, therefore, is to investigate how people who have attended a bilingual school perceive the influence of this type of education on their metalinguistic and cognitive abilities.

Understanding Metalinguistic Ability

Metalinguistic ability, one of the two main concepts explored in this article, is best understood as “the ability to think about and reflect upon the nature and functions of language”¹ (Gombert, 1990, p. 2). Research shows clear evidence metalinguistic ability in bilingual children does indeed differ from that of their monolingual counterparts. According to Friesen and Bialystok (2012), bilingual children tend to have a better understanding of the arbitrary nature of language. This phenomenon holds true for both bilingual children who have received a formal bilingual education and for those who have not, as such a concept could become obvious through simple personal reflection on one's own language use. As a result of their everyday experience, bilingual children are habitual code-switchers who tend to understand the relationship between sound and meaning is arbitrary; namely, words and concepts are not intrinsically connected. These individuals are, therefore, not bound by one lexicon and must therefore make decisions about which lexicon to use according to what is situationally appropriate (Hoff et al., 2011). By contrast, monolingual children lack the advantage of interacting with another lexicon, which renders them less likely to develop the capacity to conceptualize the expression of ideas in any way other than through the sole language they speak. To illustrate with a hypothetical example, a French-English bilingual child uses the word *flag* in conversation with her anglophone mother, thus choosing the appropriate English word based on the language of her interlocutor. The child knows, however, she could have just as easily used the word *drapeau* with a francophone interlocutor. Since she has two different lexica from which to choose, she would be more likely to have internalized the arbitrary nature of language compared to a monolingual child who knows only one word to represent the concept of a flag. This hypothetical child could be as young as a toddler and could be a sequential or a simultaneous bilingual learner. What matters as far as bilingualism goes is such a child can draw from both languages, as he or she has vocabulary available in both lexica.

Increased metalinguistic awareness in students in bilingual programs has also been shown to have a positive effect on these students' ability to apply logic and reasoning to language. For example, ter Kuile et al. (2011) conducted a study that tested the ability of students to decipher an unknown written language and found bilingual students performed significantly better than monolingual students. The success of bilingual students on this metric of metalinguistic ability indicates bilingual education provides advantages beyond fluency in another language.

Understanding Cognitive Ability

Cognitive ability is the other main concept explored in this article. Although people are born with a base level of genetic coding that affects performance in various areas, such as physical strength and general cognitive ability, the factors that can influence a person's abilities are not limited to innate, inherited traits (Mitchell, 2018). This interplay between nature and nurture is the fertile ground from which a significant proportion of current psychological and neurological research springs. Education is one such environmental factor. There is substantial evidence the education a

¹ This definition was translated from the French original into English by the first author.

person receives can have a profound and lasting effect on the neurological pathways of the brain, with bilingual education, more specifically, having been shown to be a powerful tool for enhancing cognitive ability (Mustard, 2010).

Cognitive abilities relevant to bilingual education include linguistic problem-solving skills, non-linguistic problem-solving skills, and general cognitive skills outside of problem-solving. While linguistic problem-solving skills are associated with learning a new language, their non-linguistic counterpart encompasses diverse abilities related to math and spatial reasoning. General transferable cognitive skills unrelated to problem-solving include a range of abilities such as sustaining attention, using working memory, understanding the perspectives of others, and exercising executive control. As used by Bialystok and her colleagues (2010), the term *executive control* refers to the ability to focus one's attention and efforts on a given task. Research has demonstrated bilingual children are not as easily distracted by irrelevant information as their monolingual counterparts, as they are particularly adept at non-verbal conflict tasks that require the ability to concentrate on one aspect of the task while blocking out irrelevant information from another (Barac & Bialystok, 2012; Bialystok et al., 2010).

Time Spent in Program

High levels of formal bilingual education as well as extensive exposure to both languages in everyday situations are the main determinants of the degree to which an individual can use both languages (Bialystok & Poarch, 2014). In other words, it is these two factors that ultimately dictate the general degree of bilingualism an individual achieves. Along the same lines, increased bilingualism as an isolated factor has been linked to better outcomes in both metalinguistic development and cognitive ability. This fact points to bilingualism as the source of these increased functions, rather than some other, unaccounted for factor (Bialystok & Poarch, 2014). As a result of having to filter through information in two languages, bilingual children also display better overall executive control when performing tasks of cognition (Barac & Bialystok, 2012; Bialystok et al., 2010).

A common line of inquiry among researchers is to wonder to what degree students must be bilingual in order to reap cognitive benefits. Although there is no specific point at which students suddenly begin to increase their cognitive abilities, it has been shown as children become increasingly bilingual and have more experience in a bilingual education environment, their performance on nonverbal executive control tasks improves. This improvement in cognitive function has been shown by studying students throughout their progression in English/French/Hebrew bilingual education (Barac & Bialystok, 2012; Bialystok et al., 2010).

Objective of this Study

The metalinguistic and cognitive benefits of bilingual education are well-documented in the large-scale experimental studies discussed above. In these quantitative studies, participants of a wide range of age and language backgrounds are usually brought into a laboratory where they engage with various tasks aimed at assessing their metalinguistic and cognitive abilities compared to monolingual control groups. It is largely unknown, therefore, whether individuals who had the opportunity to participate in bilingual programs are themselves aware they have reaped the benefits touted by that line of research. In light of this gap in the literature, the objective of this study is to investigate whether there are trends in the self-perceived outcomes of bilingual education on people who have spent at least four years in a bilingual educational setting. In pursuit of this objective, the following guiding research questions underpinned all decisions made in this study:

1. How do individuals who have received at least four years of bilingual education perceive the influence of this education on their metalinguistic abilities?
2. How do these individuals perceive the influence of this education in regard to their cognitive abilities?

Methodology

This study focuses on participants who attended a minimum of four years of bilingual education, specifically on their perceptions of the influence of this education on their metalinguistic and cognitive abilities. Considering the exploratory and emergent nature of this investigation, a qualitative approach to research (Creswell, 2003) was chosen. There was a total of 10 participants, who were recruited through flyers distributed on a small liberal arts college campus and through snowball sampling (Dattalo, 2008). The participants did not have to be students at this college. The requirement for participation was a minimum of four years in bilingual education, more specifically, in an immersion program in which two languages were used to learn core curricula. The requirement of four years, albeit somewhat arbitrary, was chosen for two reasons: if a participant attended a bilingual high school, four years would encompass the complete program. At the same time, lowering the requirement could have resulted in participants who were only briefly associated with a bilingual program, which may not have allowed for insightful reflections.

Data were collected using semi-structured one-on-one interviews (Fontana & Frey, 2000). The interview questions in the Appendix were designed to explore participants' perception of the metalinguistic and cognitive outcomes of their bilingual education experience. Questions concerning the metalinguistic aspects of linguistic thought were meant to spur participants to discuss the degree to which they consciously process grammar and vocabulary, as well as whether they believe their bilingual education has contributed to how they process these components of language. Specifically, these questions were designed to explore the perceived influence of participants' bilingual education on the processing of grammar and vocabulary, vocabulary size, and vocabulary recall. Questions regarding participants' perceptions of the influence of bilingual education on their cognitive abilities explored their ability to learn another language, their problem-solving skills, and other transferable cognitive skills. Interviews started by obtaining participants' written consent and were conducted in person, except in the case of the Canadian participants, who were interviewed via video call. Interviews were audio-recorded and subsequently transcribed verbatim, lasted an average of 17 minutes, and were conducted in English by the first author.

The data produced in the interviews were analyzed inductively and recursively following a grounded theory approach (Bernard & Ryan, 2010; Strauss & Corbin, 1990) in order to identify emergent themes. As Bernard and Ryan (2010) explained, grounded theory is well suited for "analyzing interview data about how people experience the mundane and the exotic, the boring and the enchanting moments of life" (p. 269). In addition, according to Thomas (2006), the use of inductive analysis allows "research findings to emerge from the frequent, dominant, or significant themes inherent in raw data" (p. 238). The first author was the primary analyst, and she used memo writing (Hesse-Biber & Leavy, 2011) extensively to identify emerging themes and make connections between literature and participant responses and between the participant responses themselves. In grounded theory, the literature can be used to provide concepts (such as, in this case, metalinguistic and cognitive abilities) that are checked against actual data and to stimulate questions (Strauss & Corbin, 1990). The transcripts were analyzed and coded at the paragraph and sentence levels. The second author read all transcribed interviews and met weekly with the first

author to discuss the analysis. Both authors are bilingual, although neither attended a bilingual school. It should be noted this study was conducted in compliance with the rules and regulations for the protection of human subjects, and its design was approved by the institutional review board of the college where both authors are affiliated.

Educational Background of Participants

The table below summarizes the 10 participants' key information. They come from diverse linguistic and cultural backgrounds, representing three nationalities (American, Canadian, and Haitian) and a range of length in a bilingual education setting. It should also be noted that although some students participated in study abroad programs that involved their L2 or other languages, all were or are currently being educated at English-speaking colleges.

Table 1
The Participants

<i>Pseudonym</i>	<i>Degree of bilingualism in the home</i>	<i>Country where bilingual education took place</i>	<i>Grades in bilingual ed. setting (# of years)</i>	<i>Degree of bilingualism in educational setting</i>	<i>Languages of bilingual ed.</i>
Daniel	Créole and French, more Créole)	Haiti	K–12 (13 years)	Significantly more French than Créole	L1: French and Créole
Marie	Créole and French, more Créole	Haiti	K–12 (13 years)	Significantly more French than Créole	L1: French and Créole
Shannon	Mostly English, some French	United States of America	K–3 (4 years)	Mostly French, some English	L2: French L1: English
Jane	Mostly English, some Spanish	United States of America	9–12 (4 years)	30% Spanish 70% English	L2: Spanish L1: English
Cameron	English only	United States of America	7–12 (6 years)	50/50 split	L2: Spanish L1: English
Bridget	English only	United States of America	9–12 (4 years)	$\frac{1}{3}$ Spanish $\frac{2}{3}$ English	L2: Spanish L1: English
Alexandra*	English only	Canada	K–2 3–7 8–10 11–12 (13 years)	100% French 80% French 20% English 50/50 split 25% French 75% English	L2: French L1: English

Hannah*	English only	Canada	6–7 8–10 11–12 (7 years)	100% French 50/50 split Three classes in French, the rest in English	L2: French L1: English
Sophie*	English only	Canada	6–10 11–12 (7 years)	100% French 50/50 split	L2: French L1: English
Luke*	English only	Canada	6–7 8–12 (7 years)	100% French 50/50 split	L2: French L1: English

Note. An asterisk (*) indicates participants who have already graduated with a four-year degree. Alexandra also holds a Master’s of Teaching. All other participants are currently undergraduate students in college.

Findings

Analysis of the interview transcripts revealed several reoccurring themes that characterized the participants’ perceptions of the outcomes of their bilingual education. This section will first address key findings related to RQ1 (metalinguistic abilities) and RQ2 (cognitive abilities). We will then consider the amount of time participants spent in their bilingual programs, which was found to be an important factor to consider when analyzing the quality and way in which participants answered the interview questions. Finally, we will present data on one specific participant whose responses differed significantly from those of her peers and will speculate why that might have been the case.

Metalinguistic Ability

All participants affirmed their bilingual education contributed to the way they process grammatical concepts in general, which indicates participants’ education may have increased their metalinguistic awareness of grammar. Their perception of the degree and nature of this contribution, however, was variable. Alexandra, for example, was unable to articulate exactly how her education affected her grammar but was sure it did. Cameron, Shannon, and Luke were reserved in their responses, using words like “sort of,” “a bit,” and “probably” when describing the generally positive influence their bilingual education had on their grammar. Bridget, Marie, Jane, Daniel, and Sophie were more confident and precise in their descriptions. Bridget described herself as more “aware” of grammar. Marie credited her education with giving her a “method” with which to understand grammar. Jane, whose first language is English, thought she gained a better understanding of English grammar “terms” and “verb forms.” Daniel thought his French and Créole education made him more cognizant of grammatical rules. Sophie perceived both negative and positive outcomes:

There’s lots of grammar differences between French and English, and so I still, even though I haven’t been in French immersion for 10 years now, I still make some of those errors in English. Like, putting the dollar sign on the wrong side it’s like . . . these are all things that I still have to think about because during like those pivotal years when you’re doing a lot of writing, I did that, and so there I think there are some negative consequences of . . . not consequences, but effects of having done that, in terms of my grammar.

She then went on to say the positive outcome was the general grammatical awareness she may not have developed without her “in-depth” bilingual grammar education.

Besides an influence on how they process grammar in general, all participants, except for Daniel, stated their bilingual education influenced their knowledge and use of vocabulary and/or grammar in their L1, specifically. Most participants perceived this influence to be positive. Three participants (Hannah, Sophie, and Shannon) indicated common roots and cognates between their native language and their L2 made it easier to decipher words in their native language. Luke summed up his thoughts by saying his bilingual education helped with “language in general.” Alexandra saw delayed positive effects of her bilingual education on the grammar of her native language when she continued her study of her L2 and began an L3, German, at the college level. She said, “I’m sure it helped on some levels of just understanding, like, some of the grammar in German, just because in English, I don’t think about grammar at all.” She is unsure, however, if there has been an influence on her L1 vocabulary. Both Hannah and Cameron consider themselves more aware of grammatical structures in their native language, and Hannah has caught herself applying French word order to English. While Shannon perceived no influence of her bilingual education on her L1 grammar, Bridget perceived no influence on her L1 vocabulary. Daniel, who was educated in both of his native languages, French and Créole, expressed since he already spoke both languages at home and at school, he could not see the influence of his education on these languages. Marie, who was also educated in her two L1s, thought her bilingual education helped her to use more precise vocabulary, as she has more words from which to choose and is aware of nuances of meaning. However, she stated since both languages were native to her, her bilingual education did not have an influence on her knowledge of the grammar of these languages.

Cognitive Ability

In investigating the perception participants had of the outcome of their bilingual education on their cognitive skills, their thoughts on how well they were able to learn additional languages revealed varied experiences. Bridget and Marie both credited their bilingual education with having facilitated their attempts with a third language. They cited having a better understanding of grammar (Marie) and having general experience with language learning (Bridget) as reasons for their success with another language. Luke learned some Spanish while he was still enrolled in his French and English bilingual program and said the similarities between French and Spanish rendered his bilingual background “pretty helpful” for tackling Spanish. Jane and Cameron have not attempted to learn another language since exiting the bilingual programs in which they were enrolled but were confident their bilingual background would give them an advantage in future foreign language endeavors. Jane thought the Spanish she learned through her bilingual education would help her decode cognates in other romance languages, such as Italian, French, and Portuguese.

Other participants found it challenging to learn another language after being enrolled in bilingual programs. Hannah and Alexandra, in particular, struggled when they took language classes during their undergraduate degree programs, although they learned English and French in their K–12 schools. Alexandra described her shock when her German class became increasingly difficult, saying, “I realized how difficult it actually is to learn a language and how hard it is and how I don’t, like, have some natural gift at learning languages.” She then explained it was this experience that made her realize she only learned French easily because she was immersed from such a young age. Both participants expressed concern their background made them overconfident in their language abilities. Hannah summed up her thoughts on the subject:

I definitely think it made me overconfident in my ability to learn another language. There was such a huge difference in being like tossed into another language in formative years versus being like 20 and trying to learn something at just such a different pace in such a different environment.

Sophie had mixed feelings, saying she was able to read and write in Italian with more ease because of linguistic similarities to French. Overall, she still labelled her attempt at a third language as having “failed” and cited interference from French as a primary reason for this failure. It should be noted Hannah, Alexandra, and Sophie were in bilingual programs for at least half of their education.

While participants were able to clearly recall their experiences learning additional languages, they had difficulty elaborating on other ways in which their bilingual education may have affected their cognitive ability. None of the three participants who were immersed in bilingual programs throughout their entire K–12 education could think of how their education related to their problem-solving skills. Other participants, however, readily formed articulate responses stating their education had a positive influence. For example, Cameron, a participant who was in a grades 7–12 program, was quick to explain when it came to problem-solving skills, her bilingual education “helped a lot,” as she can “read the behaviors in a situation to . . . basically find the best solution.” Bridget, who was in bilingual classes from grades 9–12, gave a lengthy response explaining the ways her bilingual program gave her tools that help her to solve linguistic problems using context clues and “get across” what she means even when she does not know the exact word she needs. By contrast, two of the participants who spent their entire K–12 education in a dual language immersion (DLI) program, Alexandra and Marie, were quick to conclude their education had no discernable influence whatsoever while Daniel, also a K–12 participant, described the question regarding problem-solving as “really hard” before proceeding to take a long pause followed by saying he developed better general language-learning skills because of his education. Responses followed a similar pattern regarding transferable cognitive skills outside of problem-solving skills, with Cameron saying her skills were “definitely” improved, and she is “more analytical,” a perception shared by other participants who were not enrolled in bilingual education from K–12.

Time Spent in Program

There was a general trend that the participants who spent the most time in a bilingual setting struggled to think of specific examples that demonstrated how their bilingual education may have influenced them. In particular, these participants were the same ones who tended to see little to no connection between the development of problem-solving skills and transferable cognitive skills outside problem-solving skills and their bilingual education. As mentioned above, the Canadian participants generally struggled to articulate the influence of their bilingual education on their metalinguistic and cognitive abilities. Three of the four Canadians were in bilingual programs for grades 6–12 (Hannah, Sophie, and Luke), and Alexandra’s entire K–12 education was bilingual. In response to interview questions about the outcomes of their education, Hannah and Alexandra both gave responses that included the words “I’m sure,” within the context of responses that were not at all sure. For example, Hannah used each of the following sentences as part of her responses to three different questions: (a) “I’m sure it was,” (b) “I’m sure that they are there,” and (c) “I’m sure that it has.” She employed words and phrases of uncertainty like “probably,” “I don’t know,” and “I don’t really remember” to qualify the rest of the responses containing the “I’m sure”

phrases. Hannah also said the word “probably” 15 times, whereas the mean frequency of this word across all 10 participants was 6.6 occurrences per transcript. Luke gave similarly unclear answers to several questions, using the word “probably” eight times. When asked about the influence of his bilingual education on his native language, Luke replied, “I’m not sure how it necessarily impacted my understanding of English, rather than like just language in general.” Other participants did not use phrases conveying uncertainty to the degree Hannah, Sophie, and Luke did and responded with more clarity throughout their interviews.

In addition to their general uncertainty regarding the exact nature of their bilingual education’s outcomes, some Canadian participants said they did not think their bilingual education had any influence on their thinking. Participants expressed difficulty tracing the origin of their skills and abilities to their bilingual education. For example, three of the four Canadian participants struggled to answer the question: *Do you believe your bilingual education has contributed to the way you understand and process grammatical concepts?* As discussed above, two of these three stumbled through giving some sort of response but hedged their answers with words like “I don’t know” and “probably.” Alexandra replied more straightforwardly saying, “I’m not really sure how it’s done that.” She went on to elaborate since she was always in the bilingual program, she feels like she “has only ever understood and processed it (grammar) that way.” Sophie was the only Canadian participant who did not generally flounder while articulating the outcomes of her bilingual education.

Shannon’s Case

Out of the 10 participants, Shannon seemed to be the most reluctant in answering the interview questions. In particular, she found it difficult to credit any of her cognitive or metalinguistic abilities to her bilingual education. The most distinguishing factor in her experience, compared to the other participants’, is she is the only one who did not participate in a bilingual education program as a high school student. Many of her replies included words like “hard to say” (repeated four times) and “probably” (repeated 18 times). She repeatedly explained it was hard to be sure the origin of her skills was, in fact, her early participation in a bilingual program. She also indicated since she has gone through many experiences in both her education and general life since exiting her bilingual program, it was difficult to definitively attribute various outcomes to her bilingual program. Although she is now “definitely very conscious” of the grammar of what she is writing, she does not feel she can attribute this consciousness to her bilingual education.

Discussion

The analysis of the interviews unveiled trends in how participants perceive the influence of their bilingual education on their metalinguistic and cognitive abilities. Some of these trends align more closely with the established literature than others, but all require further discussion. To begin, bilingual programs have been shown to affect students’ ability to apply logic and reasoning to language (ter Kuile et al., 2011). Since this effect applies to language in general it should, in theory, work for any language these students choose to learn. The participants in this study, however, had mixed perceptions on how their bilingual education influenced their ability to learn another language. Several participants’ experiences aligned with the literature, as they used cognates and pattern recognition to help them reason through new languages. These participants felt their bilingual education facilitated the language-learning process. On the other hand, some participants perceived their bilingual programs hindered their progress learning another language due to

confusion between the L2 and the new language and promoting a detrimental sense of overconfidence in one's language-learning abilities.

According to research, spending more time in bilingual programs increases exposure to the L2 and ultimately enhances program participants' degree of bilingualism, metalinguistic development, and cognitive ability (Bialystok & Poarch, 2014). Despite this fact, participants who were in bilingual programs throughout their K–12 education had the most difficulty pinpointing the benefits they reaped besides a high level of bilingualism. Alexandra, Sophie, and Daniel, for example, struggled to talk about the outcomes of their bilingual education on non-linguistic skills likely because they have no basis for comparison, never having been to a monolingual educational context. As Alexandra said, "I didn't really recognize that I was learning."

It is possible these participants have reaped the metalinguistic and cognitive benefits the literature indicates they should have, but they are unable to recognize them. Imagining how one's mental processing could have been different if developed in a context completely devoid of the bilingualism that was always an integral part of one's education would be a challenge for many. If not made aware of these benefits, it can be nearly impossible to trace their development.

By contrast, individuals who were immersed in their L2 later may have had a better basis for comparing the influence of their bilingual education on both their linguistic and non-linguistic skills. Jane and Bridget, for example, joined a bilingual program in ninth grade, which may account for the ease with which they responded to most questions. At ninth-grade, students would have approximately 14 years of monolingual life experience from which they could draw when assessing the outcomes of their bilingual programs. Additionally, high school students are more cognitively developed than younger students, which means these participants would have entered the bilingual phase of their education at a time when they were better equipped to make judgements and comparisons, as well as develop an awareness of language rules. Participants who entered their programs in elementary or middle school would not have begun the bilingual phase of their education with the same critical-thinking tools that come with increased cognitive maturity.

Concluding Remarks

In sum, this study revealed several patterns in participants' perception of how their bilingual education influenced their thinking. There were a few strong commonalities all participants shared, such as none of them wished they had withdrawn from their bilingual programs and believed these programs contributed to the way they process grammatical concepts. Almost all participants stated their bilingual education had an influence on the vocabulary and grammar of their native languages. Participants who spent the longest amount of time in their programs struggled to articulate the specific benefits their education had in relation to both their cognitive ability and their ability to learn a new language. The participants' perception of how their bilingual education affected their ability to learn another language was mixed. Some thought their previous experience with language learning was beneficial, while some participants who had been in bilingual programs the longest explained they were overconfident in their language-learning abilities and struggled with other languages.

The findings from this study bear implications on the growing efforts of Dual Language Immersion (DLI) programs in Georgia. Understanding how to communicate effectively with prospective and current Georgia DLI families is crucial for ensuring the continued growth of these nascent programs. Although such programs are a good investment for the Department of Education on paper, recruiting families to enroll their children and follow through with that commitment requires a public relations campaign that communicates the multitudinous personal benefits that

are at least as enticing as the economic forecasts of how students can fit into the future labor market. One way of assisting families in their decision of whether this type of education is the right fit for their children is by highlighting research on the various impacts of bilingual education. Despite the academic literature indicating bilingual programs provide many advantages, students in this study showed they might fail to perceive these benefits clearly. To enhance students' perception of the benefits of a bilingual education, DLI faculty and staff should be encouraged to work intentionally to raise students' awareness of their program's research-proven assets. Armed with a more precise understanding of how they have been positively influenced, students who experience bilingual education for all or most of their K–12 schooling could be turned into the strongest advocates for the promotion and promulgation of their programs.

In particular, it could be helpful to familiarize students with the non-linguistic outcomes of their education, such as enhanced problem-solving and other cognitive skills. It was clear from this study the participants who had the longest, most extensive bilingual education experience struggled to come up with concrete examples of how their education related to non-linguistic skills. By emphasizing the cognitive benefits of bilingual education not directly related to language skills, such as problem-solving skills, schools could make their programs more attractive to families who might otherwise choose different academic paths for their children. People who do not consider themselves linguistically gifted or even particularly keen on being fluent in another language would have new reasons to consider trying programs that would not normally appeal to them. It would be up to schools and other educational agencies to use student advocates to promote their immersion programs from this new and more complex perspective.

There are different ways this topic can be expanded, as a better understanding of the underlying reasons for the patterns identified in participant responses could aid schools in their efforts to communicate the positive aspects of bilingual education to parents, students, and prospective families. One avenue for expansion regards the finding that participants had varied perceptions of how their bilingual education affected their ability to learn another language. In particular, the difference in responses between students who had been in immersion education for a long time and those who had not was stark. Several of the individuals who spent a long time in bilingual programs expressed they were overconfident in their linguistic abilities. Further research concerning the origin of this overconfidence and how to address it could help schools to give their students more realistic expectations of the work future language-learning endeavors may require. Students would be armed with the knowledge they need to tackle other languages without becoming discouraged or disappointed in themselves for not being, as Alexandra put it, “amazingly gifted in languages.”

Although the findings of the current study shed some light on the perceptions participants have of the influence of bilingual education on their metalinguistic and cognitive abilities, it is important to acknowledge there were only 10 participants, whose education took place in one of three countries. Future studies exploring the experience of students from other countries are certainly warranted. In addition, while we avoided terms in interview questions participants may not be familiar with, such as “metalinguistic ability,” we kept phrases such as “problem-solving skills,” which participants may not have been able to immediately relate to their experiences in order to provide an insightful answer.

As mentioned above, the lack of awareness shown by the participants who were in bilingual programs for the longest time regarding metalinguistic and cognitive skills should be of great interest to schools. If students are unable to attribute their skills to their education, they will be poor ambassadors for their programs. Further research on this topic could be helpful in determining

the cause of this difficulty, which would, in turn, give schools the tools they need to address the problem and, eventually, schools could develop long-term strategies for creating and maintaining awareness of the benefits of their bilingual programs.

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Appendix: Interview Questions

Metalinguistic Ability

1) During your bilingual education, was there an emphasis on explicit instruction in grammar?

(Wait for response before moving on to the next part of the question.)

If so, how do you feel this explicit instruction influenced your understanding of grammar? If not, what was the method for learning grammar? How do you feel this method influenced your understanding of grammar?

2) When you speak, to what degree do you consciously process the grammatical aspects of what you are saying? Please give examples, if possible.

3) When you write, to what degree do you consciously process the grammatical aspects of what you are writing? Please give examples, if possible.

4) Do you believe your bilingual education has contributed to the way you understand and process grammatical concepts? Please elaborate.

5) Do you believe your bilingual education has contributed to the way you understand and process vocabulary? Please elaborate.

Item 6 is for individuals whose bilingual education was at least partially conducted in a language other than their native language:

6) What impact did learning a second language have on your understanding of the grammar and vocabulary of your native language or languages? Please give examples, if possible.

Cognitive Ability

1) Have you learned or attempted to learn another language since exiting the bilingual program in which you were enrolled?

(Wait for response before moving on to the next part of the question.)

If so, what effect do you think your bilingual education had on your ability to learn another language? What is the basis of your reasoning? If not, what effect do you think your bilingual education would have on your ability to learn another language? What is the basis of your reasoning?

2) Do you think your bilingual education helped you to develop transferable cognitive skills outside of language learning? If so, please elaborate.

3) What impact do you believe your bilingual education has had on your development of problem-solving skills? Please elaborate.

4) What impact do you believe your bilingual education has had on the size of your vocabulary in your native language/languages? Please explain your reasoning.

5) Is there one language in which you mentally retrieve vocabulary more easily? For example, I can think of the specific words I want to use more easily in English than I can in French.