

## Teaching Practices and Language Use in Two-Way Dual Language Immersion Programs in a Large Public School District

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### Abstract

Many educators and policymakers look to two-way dual language immersion as one of the most promising options to close achievement gaps for English learners. However, the programs' effectiveness depends on the quality of their implementation. This article reports on a large-scale study of the implementation of dual language immersion across a large, urban school district. Using classroom observations, we examined teaching practices and language use by teachers and students in dual language immersion classrooms across an entire school district. We found strong implementation of teaching practices consistent with sheltered instruction, and strong adherence by teachers to partner language use as prescribed by the district's guidelines. This article provides a descriptive view of what is happening in two-way dual language immersion classrooms in a large, urban U.S. school district. While other studies may examine classroom practices, few have done so on this scale.

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**Key Words:** dual language immersion; dual language implementation; fidelity of implementation, classroom practices in two-way immersion

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## Introduction

As educators and policymakers seek to increase student achievement and attainment in U.S. schools for both English learners and native English-speaking students, the number of dual language immersion programs is growing rapidly. Usually beginning in kindergarten, these programs provide content instruction in two languages. Their goals are to educate students to be bilingual and biliterate; enable academic achievement; and promote cross-cultural communication and understanding. With growing demand for and interest in these programs by policymakers, educators, and parents alike, the number of dual language immersion programs in the country continues to increase.

Interest in these programs has grown for a number of reasons, including the growing proportion of U.S. school children who are English learners. Observational research studies have documented outcomes in which both English learners and native speakers of English enrolled in dual language immersion outperform their counterparts in English-only or transitional bilingual programs (Howard et al., 2003; Lindholm-Leary, 2005) and laboratory research has found that bilingualism is associated with cognitive benefits, including improved working memory, superior executive control, and better selective attention (Bialystok, 2011; Bialystok & Craik, 2010). At the same time, there is growing demand from parents who view bilingualism as an asset given an increasingly global society (Maxwell, 2012). As the number of these programs continues to grow, the question of *how* these programs are implemented is as important as *why* because the fidelity of implementation influences the extent to which the programs might achieve the desired outcomes, if we assume that the programs are appropriately designed.

In this article, we share research findings about two key aspects of implementation of two-way immersion programs across a school district—the instructional practices used by

teachers and the extent to which teachers and students use the languages in dual language immersion classrooms. We examined these practices as a way of understanding the nature of the *treatment* in the dual language immersion intervention in a public school district that has been providing dual language immersion since the mid-1980s. These findings are important because they provide a description of instructional practices in two-way dual language immersion programs across a large and heterogeneous school district and provide a view of what is actually happening in the classrooms. Descriptive studies of this scale are not widely represented in existing research. In the sections that follow, we review relevant literature, describe the setting and methods for the research, report our findings, and discuss the implications.

### **Literature Review**

Past research identifying benefits from dual language education for English learners and native English speakers alike is well known and frequently cited as a rationale for implementing two-way dual language immersion. Studies have found that two-way dual language programs are associated with elevated student outcomes for English learners, heritage language learners, and native speakers of English. For example, Collier and Thomas (2004) observed elevated student outcomes for Spanish-speaking English learners who attended two-way dual language immersion programs in Houston Independent School District. Thomas and Collier (2002) found that students in Maine whose heritage language was French experienced substantial increases in achievement test scores after participating in French-English two-way dual language programs. Further, based on a review of research on student outcomes in one-way, two-way and indigenous language immersion education, Lindholm-Leary and Genesee (2014) concluded that both majority and minority language students benefit from participation in language immersion programs. Based on these findings, many researchers and educators view two-way dual language

immersion programs as the most promising intervention to close the achievement gap for English learners.

Alongside the findings that dual language immersion programs are associated with higher student outcomes is the research from cognitive psychology that finds that bilingualism is associated with cognitive advantages, such as improved working memory, superior executive control, and better selective attention (Bialystok, 2001; Bialystok, 2011). Building on these ideas, other research has found that the cognitive benefits of bilingualism can be generalized across socioeconomic status and ethnicity, and that they can be acquired within the context of school programs (Esposito & Baker-Ward, 2013). However, research also suggests that the cognitive advantage accumulates through the active use of both languages (Callahan & Gandara, 2014; Luk & Bialystok, 2013; Yow & Li, 2015).

The promise of these advantages, along with recognition of the increasingly global economy has led many native English-speaking families to pursue dual language education for their children as well (Hatch, 2015; Watanabe, 2011). Recognizing the strong demand for these programs, states such Utah and Delaware have allocated millions of dollars to fund statewide dual language initiatives (Pascopella, 2013; Delaware Department of Education, 2015), and large urban school districts such as the New York City Department of Education and the Los Angeles Unified School District are implementing dual language programs in growing numbers (Gracile, 2015; Harris, 2015). These programs include both two-way programs, designed to serve native speakers of the partner language and native speakers of English, as well as one-way programs, designed to serve primarily native speakers of English.

While fidelity of implementation is always important, the growing number of dual language programs means that they affect larger numbers of students. Fidelity is the degree to

which an intervention or model of instruction is implemented as it was originally designed to be implemented (Echevarria et al., 2011). Along those lines, dual language researchers have acknowledged that “how [dual language programs are] implemented can influence the rate at which English learners close the gap,” and “the quality of and fidelity to [...] implementation characteristics can lead to significant differences in student achievement” (Collier & Thomas, 2004). Further, Mora, Wink, and Wink (2001) point out that the match between dual language teachers’ actual patterns of use of the two languages and the program’s stated model is critical. The authors further underscore the importance of fidelity of implementation, pointing out that while *well-implemented* dual language programs give students access to optimal conditions for academic development in both languages, the label “dual language” in itself does not guarantee success in meeting the program’s goals.

Two important aspects of fidelity of implementation of education programs are *adherence* and *quality of delivery*.<sup>1</sup> Adherence is the “degree to which program components were delivered as prescribed” (Greenberg, Domitrovich, Graczyk, & Zins, 2005; Hamre et al., 2010). Although quality of delivery may be defined in various ways, one way to understand it is the extent to which “the implementer delivers the program using the techniques, processes, or methods prescribed” (O’Donnell, 2008). For the purpose of this study, we interpret this as the extent to which teachers as implementers use the teaching practices encouraged by the district. These concepts provide a rationale for the research described in this paper.

In the sections that follow, we describe how we examined quality of delivery by documenting teaching practices and adherence to the dual language immersion model by

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<sup>1</sup> In this conceptualization, fidelity of implementation and general quality are not synonymous. Quality of delivery is viewed as one dimension of fidelity, and does not refer to the overall quality of the program or teacher performance.

documenting the use of the partner language during instruction. Because this investigation took place as part of a larger study designed to examine both the effects of dual language immersion and the implementation of these programs, we chose to look at teaching practices in part to understand whether instruction in two-way dual language immersion programs differed substantially from that in non-dual-language programs. We looked at use of the partner language during instruction because it is a primary indicator of whether the program is being implemented according to the district's two-way dual language immersion model.

### **Setting**

We conducted this research in a large public school district in the northwest region of the United States. The district has a long history of dual language immersion, having implemented dual language programs beginning in the 1980s. Its total student enrollment exceeds 48,000 students. When our study began in 2012-13, approximately 8 percent of them were enrolled in dual language programs (one-way and two-way), and that proportion has increased in the following years to nearly 10 percent in 2014-15. In that same school year, 18 percent of kindergarten students were enrolled in dual language programs. When the study began, the district provided dual language immersion programs in four partner languages: Spanish, Russian, Japanese, and Mandarin. At the time of our study, the Russian program and all but one of the Spanish programs provided two-way dual language immersion, in which about half the students were native speakers of the partner language. The programs in the other two partner languages, Japanese and Mandarin, provided one-way dual language immersion, in which the majority of students are native speakers of English. Table 1 presents a summary of the programs examined in our study.

< Table 1 about here >

The school district's Department of Dual Language has a stated priority to close the opportunity gap for historically underserved students, primarily English learners and students of color. To that end, the department provides numerous options for students to become bilingual and biliterate. Dual language immersion is one of those options.

The Department of Dual Language provides teachers and administrators with specific guidelines for allocating instructional time across English and the partner language and the time spent in each language on the core subjects of language arts, mathematics, science, and social studies in each school day. According to a district document, the guidelines are designed specifically to “remove the predictability of a student’s academic achievement based on race, culture, and linguistic background, particularly for our emerging bilingual children.” These guidelines constitute the instructional model underpinning the two-way dual language programs, and teachers and administrators in two-way programs received professional development to train them in implementing the model. At the time of the study, teachers also received professional development training on sheltered instruction techniques. All two-way programs begin in K with a 90:10 distribution—90 percent of instructional time in the partner language, and 10 percent in English—and the allocation of time changes with each grade until reaching 50:50 in fourth and fifth grades. In grades 6 through 8, students attend two class periods in the partner language and the rest of their class periods in English. A simplified version of the content allocation guidelines for K through 5 is provided in the Appendix.

### **Research Questions**

As mentioned above, this research described in this article took place as part of a larger effort to examine both the effects of dual language immersion and the implementation of these programs in a large urban school district. As we analyzed the causal effects of these programs on

student achievement outcomes (Steele et al., 2015), we also sought to examine the fidelity of implementation across the programs. Specifically, we were interested in examining the implementation in terms of fidelity to the district's targeted instructional practices and the adherence to the part of the dual language immersion instructional model that states the extent to which teachers and students are intended to use each language. These fidelity findings provide a way of understanding the treatment in the dual language immersion programs and the extent to which it differed across program types. Thus, the design of the investigation described in this paper reflects the larger context in which the research was framed.

We sought to answer the following research questions:

- What does instruction look like in the dual language immersion classrooms, and are there significant differences between two-way dual language and traditional English classrooms?
- To what extent do teachers and students in two-way dual language programs use the partner language during class periods designated by the instructional model to be conducted in the partner language?

### **Methods**

Our study involved two waves of classroom observations over two academic years. In the first year, 2012-2013, our observations focused on *teaching practices*. We chose to observe teaching practices for two reasons. First, we viewed teaching practices as an indicator of the quality of delivery, and second, we wanted to select a measure that could be applied across instruction in all languages, including English, so that we could compare the findings across program types.



In 2012-13 we observed 56 teachers each for one class period in grades K through 12 across the district in 18 of the schools that offered dual language immersion programs. The teachers were invited to participate using stratified random sampling by language and grade level, and they were free to accept or decline the observation. In the observations, each covering one class period of approximately 50 minutes, we documented the teacher's use of practices consistent with sheltered instruction. Our observation protocol was based on one used by the school district, with which the dual language teachers were familiar. It listed known, established practices consistent with the Sheltered Instruction Observation Protocol (SIOP) Model (Echevarria, Vogt, & Short, 2013), and asked the classroom observers to document the extent to which teachers used these practices during the observed class period on a five-point scale. The ratings described the observed teaching practices as follows: 4 = completely evident; 3 = mostly evident; 2 = somewhat evident; 1 = slightly evident; and 0 = not at all evident. The observed class periods in this wave represented classes in two partner languages in two-way dual language immersion programs, English classes that were part of dual language programs, and traditional, English-only classes. While we did not expect the traditional, English-only classes to use sheltered instructional practices, the practices measured could be present in any language, and we sought to examine whether the teaching practices were substantially different across the different types of programs. The classroom observers were selected based on education, teaching experience, and advanced or native proficiency in the specific partner language they were assigned to observe, and they were trained and normed by a member of our research team. The initial interrater agreement after a daylong face-to-face training session was 0.83. Follow-up training was conducted by phone, yielding interrater agreements of 0.94 on pilot observations in

the field. A research team member also spot-checked the data and communicated routinely with observers about their experiences and coding challenges.

In the second year, 2013-2014, our observations focused on *language use*—in other words, we looked at *the extent to which language teachers and students stayed in the partner language* during lessons designated as partner language class periods by the instructional model. In this wave of observations, we focused on alternating grades from 1 through 7 (except for one program that was implemented only through grade 6 at the time), and observed only class periods conducted in the partner languages in dual language immersion programs. This smaller scope was intended to focus on the grades most critical to the student achievement analysis,<sup>2</sup> and the observation of alternating grades rather than all grades in this range was a concession to resource constraints. Finally, because one of the programs was implemented only through middle school, this approach allowed us to structure the observation sample so that it covered the same levels in the two partner languages examined (Spanish and Russian). In this wave of observations, the teachers were selected through purposive sampling to arrive at a distribution that covered the selected grades roughly in proportion to the population of students enrolled in each partner language. The teachers were free to accept or decline the invitation, and if a teacher declined, we sought another teacher from the same grade and partner language to fill the spot.

That year, we observed 75 class periods of approximately 45 minutes each in the selected grades in 12 schools providing two-way and one-way dual immersion programs across the district. In most cases, each of the 22 participating teachers was observed on two different days, with language use data collected during two class periods each time. The only exceptions were due to scheduling challenges that were beyond the control of this study. The observation protocol

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<sup>2</sup> The larger study of which this study was a part is reported on in Steele et al., 2015.

documented the teacher's native language, the language used by teachers for speaking as part of the lesson, and the language used by students for speaking as part of the lesson. It documented the extent to which the teachers and students adhered to the partner language during designated partner language class periods. It also recorded the amount of language students were asked to produce, both in speaking and in writing, as an indicator of the extent to which the lessons provided opportunities for productive, along with receptive, use of the partner language. The decision to examine what students were asked to produce recognizes past research that found that students in dual language immersion programs may get few opportunities to produce discourse in the classroom (Lindholm-Leary, 2001) but that they need opportunities to produce language to build their language skills (Saunders & O'Brien, 2006).

The classroom observers were selected based on the same criteria as in the previous year, and some from the first year returned. They were again trained and normed by a member of our research team. The interrater agreement rate after training was found to be 0.88. A research team member routinely spot-checked the observation data and communicated with observers about any coding challenges that arose during the observation process.

Table 2 summarizes the numbers of classroom observations conducted in each year.

< Table 2 about here >

## **Findings**

### **Teaching Practices**

In the first round of classroom observations, we visited partner language classes in both two-way dual language immersion programs, as well as classes conducted in English, either as part of dual language immersion or traditional English-only programs. We recorded teachers' use of the 14 instructional practices listed in Table 3 below. The classroom observers recorded the

extent to which each of the following practices was evident using a five-point Likert scale ranging from 0 (no evidence) to 4 (completely evident). Overall, we found that the observed classes had consistent implementation with average ratings of 3.0 or higher for the entire sample. When disaggregated, the ratings for two-way dual language class periods taught in the partner language were modestly higher, with average ratings for each practice at 3.2 or higher. However, this difference was not statistically significant at the five-percent level.

< Table 3 about here >

### **Language Use by Teachers and Students**

In the second wave of observations, we focused on language use in dual immersion partner language classrooms in alternating grades from 1 through 7 (except for one program that was implemented only through grade 6 at the time), and observed only class periods conducted in the partner languages in dual language immersion programs. We recorded the native language of the teachers and found that the majority—57 percent—of sampled teachers in the two-way programs in our sample were native speakers of the partner language they taught (either Spanish or Russian).

Because language use during class periods designed to be conducted in the partner language is an important aspect of fidelity to the dual language immersion model in terms of adherence (as defined earlier), we examined teachers' use of the partner language during these lessons. As shown in Figure 1, we found strong adherence in partner language use among the observed teachers in two-way programs. The majority used the partner language 100 percent of the observed class period, and 40 percent did so just less than the entire class period—or between 90 and 99 percent of the time. Less than 3 percent of observed class periods had teachers who stayed in the partner language less than 90 percent of the observed period.

< Figure 1 about here >

We also looked at the use of the partner language *by students* in speaking to the teacher as part of the lesson to understand their choices of language when participating in lessons. Figure 2 displays the findings. The language use by students varied to a somewhat greater extent than that of teachers. In 26.7 percent of the observed class periods, the students spoke the partner language to the teacher 100 percent of the time when participating in the lesson. In 66.7 percent of the class periods, students spoke to the teacher in the partner language between 90 and 99 percent of the time they participated. In nearly seven percent of the class periods, the students spoke to the teacher in the partner language 89 percent of the time or less, with the lowest proportion of student speech to the teacher at 30 to 39 percent, in 2.7 percent of observed classes.

< Figure 2 about here >

We found higher proportions of students departing from the partner language when we examined their use of the partner language in speaking to peers during lesson activities. Figure 3 shows that only 20 percent of the observed class periods had all students using the partner language exclusively in speaking to peers during lesson activities, such as pair- or group work. (Although students' choice of language in speaking to peers for purposes other than the lesson is also important, we did not include it in the observations due to practical constraints.) In forty-three percent of observed classes, students adhered to the partner language for lesson-based speech to peers between 80 and 99 percent of the time; in 21 percent of the classes, students did so 79 percent of the time or less. Those categorized as "n/a" did not have opportunities for students to speak to peers as part of the lesson.

< Figure 3 about here >

To understand the opportunities for language use in the classroom, we looked at the quantity of speech and quantity of writing students were asked to produce as part of the lesson activities. Figure 4 displays the most common length of speech students were asked to produce as part of those activities. For example, if during a lesson, a teacher most commonly asked questions that were meant to elicit only a “yes,” “no,” or a one-word answer, such as naming an object, it would be rated as a “1.” If during a lesson, a teacher mostly commonly asked questions or provided prompts that were meant to elicit spoken responses from students of substantial length, such as four sentences or longer, such as to describe sequence of events, tell a story, or explain a multi-step process, the rating would be a “5.” This item was meant to assess the *opportunities* students were given to speak, rather than the extent to which they actually did speak.

< Figure 4 about here >

As Figure 4 shows, in the majority of observed class periods—55 percent—students were mostly commonly asked to produce speech of 4 sentences or longer. This suggests that students were being given opportunities to produce speech to a meaningful extent, as compared to only short utterances that would give them little practice. This was true across all grades. Although the lower grades had more instances of students being asked to produce speech of only one full sentence for the lesson activity, two to three sentences and four sentences or longer were more common across all grades.

In Figure 5, we display the findings for the length of written language asked for as part of the lesson activities. We recorded the length of written language that students would produce if they participated fully in whatever part of the lesson gave them the greatest opportunity to write. For example, if the teacher provided an exercise designed to elicit only a series of one-word

answers, it would be rated as a “1.” If the exercise were designed to have students write a paragraph or some other longer text, then the rating would be a “5.” If the observed class period did not call for students to write, it was “n/a” (not applicable). Due to practical constraints, we did not record what individual students actually wrote during the lessons. We found that the opportunities for students to write during the class period were generally shorter than those to speak. In about one-third of observed class periods, the students had the opportunity to write four sentences or longer. In 17.3 percent of observed class periods, they had the opportunity to write two to three sentences. In 12 percent of cases, they had the opportunity to write a short phrase or a single full sentence, and in 9 percent of cases, they had the opportunity to write only single words.

< Figure 5 about here >

When we looked at variations across grades, there were predictable differences between the lower and upper grades that reflect the difference in proficiency across the grades. For example, one can reasonably expect that seventh graders would be more capable of producing longer passages of writing than first graders, and that lessons in lower grades might ask for less writing. Consistent with that, we found that for the upper grades, the greatest opportunity to write was most commonly two to three sentences or four sentences or more, whereas the lower grades had more of a spread, with more cases of the greatest opportunity to write being only a single word or short phrases.

### **Discussion**

In this paper, we examined two aspects of the fidelity of implementation of dual language programs in a large public school district. We looked at teaching practices as an indicator of quality of delivery, and partner language use by teachers as an indicator of adherence to the two-

way dual language model delineated by the school district. We also looked at other, related characteristics of the programs, including the students' use of the partner language during class periods and the opportunities for students to produce both spoken and written language in the partner language during class.

Regarding teaching practices, we found that all of the class periods observed, including those taught in partner languages and those in English, showed evidence of strong implementation of the teaching practices targeted by the district. While these 14 teaching practices are not an exhaustive list, they do provide a basic indicator of quality of delivery as a dimension of fidelity of implementation. Further, the fact that we found comparable levels of use of these practices across the partner language classes in the two-way dual language immersion program and the traditional English classes reflects well on the consistency of instruction overall and addresses some of the concerns that the quality of instruction may differ across program types. If the instruction differs, it may be on other dimensions not investigated here.

The finding of relative consistency in teachers' use of sheltered instruction practices even in the non-dual language, traditional English classes we observed in the first year was consistent with the idea that those practices can be useful in a variety of instructional contexts (Short, Echevarría, & Richards-Tutor, 2011). We did not find evidence that classroom instruction varied systematically between dual language and non-dual language classrooms. This finding of instructional consistency is important because it suggests that any academic benefits of dual language immersion are likely to accrue through the acquisition of two languages in the classroom rather than through systematic differences in teaching practices. While that implication is probably not surprising to most dual language educators, it is important to



policymakers and others who seek insight to the source of any advantage dual language programs might provide to students.

Although our data provide a unique window into the range of instructional practices in dual language immersion schools in this school district, there are limitations to the use of the data. For example, it is important to note that all of our observations—even those in non-dual language classrooms—were conducted in schools that provided dual language immersion programs. It is also important to bear in mind that each observed classroom was viewed only once in Year 1, which means that we cannot be certain that the practices seen on the observation day for each of the 79 class periods were broadly representative.

In Year 2, we observed most of the selected classrooms for a total of four class periods on two different days. These data provide a more reliable representation of instruction in the observed classrooms, but they represent a smaller number of classrooms—31 as compared to 79. The strength of the design is that together, the two years of data provide relatively broad insight into instructional practices in dual language immersion schools and deeper insight into language use in partner language classes in the two-way dual language programs.

Our examination of the length of oral and written language production asked of students as part of the lesson also serves as an indicator of quality of implementation. As the school district's Department of Dual Language has an explicit goal to educate students to become bilingual and biliterate, the classes must provide students with adequate opportunity to do so. While it is beyond the scope of this study to define how much productive practice is adequate, we have provided a descriptive account of the extent of the opportunities provided in this district.

For language use, we found strong adherence to the partner language by teachers in class periods prescribed to be conducted in the partner language by the program guidelines (which are

provided in the Appendix). Students, on the other hand, adhered to the partner language less closely. The greater variation in student language use may reflect translanguaging—the complex practices that emerging bilinguals engage in as they communicate in the many cultural and sociolinguistic contexts in which they live (Gort, 2015; García & Wei, 2014). However, a more thorough analysis of any translanguaging that may have been taking place was beyond the scope of this study.

The student language use data shed light on the variability in students' production of the partner language within immersion classes. If, as research suggests, the cognitive benefits of bilingualism accumulate through the active use of two languages, then the variability in students' partner language production and the opportunities for partner-language production reveal an important area of focus for professional development and research.

Finally, although we examined only two aspects of the fidelity of implementation—quality of delivery and adherence—the findings are positive. As past research has found a direct relationship between implementation and student achievement (Echevarría et al., 2011), this suggests that at least with respect to the practices examined in this study, the programs in this district are positioned to meet their stated goals.

### **Conclusion**

While numerous studies examine the effects of two-way dual language education in schools and districts, this study provides a rare descriptive view of classroom practices in two-way dual language immersion programs across a broad sample of English and partner language immersion classes within a large, urban school district. We found strong implementation of teaching practices consistent with sheltered instruction, as well as strong adherence by teachers to partner language use as prescribed by the district's guidelines. Students' use of the partner

language varied more, which could reasonably be expected. As the number of dual language immersion programs continues to grow, educators and policymakers may find this work informative as it reflects some of the ways in which schools and districts can assess program fidelity to ensure that their programs contribute positively to student achievement and closing achievement gaps, two of the foremost goals of dual language immersion. The study findings also highlight student language use in dual language classrooms as an area of focus for professional development and research.

## References

- Bialystok, E. (2001). *Bilingualism in development: Language, literacy, and cognition*. Cambridge, UK: Cambridge University Press.
- Bialystok, E. (2011). Reshaping the mind: The benefits of bilingualism. *Canadian Journal of Experimental Psychology*, 65(4), 229-235. DOI: 10.1037/a0025406
- Bialystok, E., & Craik, F. I. M. (2010). Cognitive and linguistic processing in the bilingual mind. *Current Directions in Psychological Science*, 19(1), 12-23. DOI: 10.1177/0963721409358571
- Callahan, R. M., & Gandara, P. C. (Eds.). (2014). *The bilingual advantage: Language, literacy, and the US labor market. Vol. 99 of Bilingual Education and Bilingualism*. Clevedon, UK: Multilingual Matters.
- Collier, V. P., & Thomas, W. P. (2004). The astounding effectiveness of dual language education for all. *NABE Journal of Research and Practice*, 2(1), 1-20.
- Delaware Department of Education. (2015). *World Language Immersion Program Expands for 2015-16 School Year*. Retrieved from <http://news.delaware.gov/2015/01/07/world-language-immersion-program-expands-for-2015-16-school-year/>
- Echevarría, J., Richards-Tutor, C., Chinn, V., & Rattleff, P. (2011). Did they get it? The role of fidelity in teaching English learners. *Journal of Adolescent and Adult Literacy*, 54(6), 425-434.
- Echevarría, J., Vogt, M. & Short, D. (2013). *Making Content Comprehensible for English Learners: The SIOP® Model (4<sup>th</sup> Edition)*. Boston, MA: Pearson Education, Inc.
- Esposito, A. G. & Baker-Ward, L. (2013). Dual-language education for low-income children: Preliminary evidence of benefits for executive function. *Bilingual Research Journal: The*

- Journal of the National Association for Bilingual Education*, 36(3), 295-310. DOI: 10.1080/15235882.2013.837848
- García, O., & Wei, L. (2014). *Translanguaging: Language, bilingualism and education*. New York, NY: Palgrave Macmillan.
- Gracile, Y. (2014, July 9). LA Unified to add more dual language immersion programs. *LA School Report*. Retrieved from <http://laschoolreport.com/la-unified-adds-more-dual-language-immersion-programs-laUSD/>
- Gort, M. (2015) Transforming literacy learning and teaching through translanguaging and other typical practices associated with “doing being bilingual.” *International Multilingual Research Journal*, 9(1), 1-6. DOI: 10.1080/19313152.2014.988030
- Greenberg, M. T., Domitrovich, C. E., Graczyk, P. A., & Zins, J. E. (2005). The study of implementation in school-based preventive interventions: Theory, research, and practice. *Promotion of mental health and prevention of mental and behavioral disorders, Vol 3*. Rockville MD: Substance Abuse and Mental Health Services Administration.
- Hamre, B. K., Justice, L. M., Pianta, R. C., Kilday, C., Sweeney, B., Downer, J. T., Leach, A. (2010). Implementation fidelity of MyTeacherPartner literacy and language activities: Association with preschoolers’ language and literacy growth. *Early Childhood Research Quarterly*, 25(3), 329-347.
- Harris, E. A. (2015, January 14). New York City Education Department to add or expand 40 dual-language programs. *The New York Times*. Retrieved from <http://www.nytimes.com/2015/01/15/nyregion/new-york-city-education-department-to-add-or-expand-40-dual-language-programs.html? r=0>

Hatch, H. (2015, June 3). Dual immersion students leave sixth grade fluent in two languages.

*KUTV.com*. Retrieved from <http://kutv.com/news/local/dual-immersion-students-leave-sixth-grade-fluent-in-two-languages>

Howard, E. R., Sugarman, J., Christian, D. (2003). *Trends in two-way immersion education: A review of the research*. Center for Research on the Education of Students Placed At Risk Report 63. Baltimore, MD: The Johns Hopkins University. Retrieved from

<http://www.csos.jhu.edu/crespar/techReports/report63.pdf>

Lindholm-Leary, K. J. (2001). *Dual language education*. Clevedon, UK: Multilingual Matters.

Lindholm-Leary, K. J. (2005). The rich promise of two-way immersion. *Educational Leadership*, 62(4), 56–59.

Lindholm-Leary, K., & Genesee, F. (2014). Student outcomes in one-way and two-way immersion and indigenous language education. *Journal of Immersion and Content-Based Language Education*, 2(2), 165-180.

Luk, G., & Bialystok, E. (2013). Bilingualism is not a categorical variable: Interaction between language proficiency and usage. *Journal of Cognitive Psychology*, 25(5), 605-621.

Maxwell, L. A. (2012). 'Dual' classes see growth in popularity. *Education Week*, 31(1), 16-17.

Mora, J. K., Wink, J., & Wink, D. (2001). Dueling models of dual language instruction: A critical review of the literature and program implementation guide. *Bilingual Research Journal: The Journal of the National Association for Bilingual Education*, 25(4), 435-460, DOI: 10.1080/15235882.2001.11074462

O'Donnell, C. L. (2008). Defining, conceptualizing, and measuring fidelity of implementation and its relationship to outcomes in K–12 curriculum intervention research. *Review of Educational Research*, 78(1), 33-84. DOI: 10.3102/0034654307313793

- Pascopella, A. (2013, November). Utah's languages of opportunity. *District Administration*. Retrieved from <http://www.districtadministration.com/article/utah%E2%80%99s-languages-opportunity>
- Saunders, W., & O'Brien, G. (2006). Oral language. In F. Genesee, K. Lindholm-Leary, W. Saunders, & D. Christian (Eds.) *Educating English language learners: A synthesis of research evidence* (pp. 14-63). New York, NY: Cambridge University Press.
- Short, D. J., Echevarría, J., & Richards-Tutor, C. (2011). Research on academic literacy development in sheltered instruction classrooms. *Language Teaching Research*, 15(3), 363-380. DOI: 10.1177/1362168811401155
- Steele, J. L., Slater, R. O., Zamarro, G., Miller, T., Li, J. J., & Burkhauser, S. (2015). *The effects of dual-language immersion on student achievement: Evidence from lottery data*. Society for Research on Educational Effectiveness, Washington, DC.
- Thomas, W. P., & Collier, V. P. (2002). A national study of school effectiveness for language minority students' long-term academic achievement. Santa Cruz, CA: Center for Research on Education, Diversity & Excellence. Retrieved from <http://www.usc.edu/dept/education/CMMR/CollierThomasComplete.pdf>
- Watanabe, T. (2011, May 8). Dual-language immersion programs growing in popularity. *Los Angeles Times*. Retrieved from <http://articles.latimes.com/2011/may/08/local/la-me-bilingual-20110508>
- Yow, W. Q., & Li, X. (2015). Balanced bilingualism and early age of second language acquisition as the underlying mechanisms of a bilingual executive control advantage: Why variations in bilingual experiences matter. *Frontiers in Psychology*, 6, 1-12. DOI: 10.3389/fpsyg.2015.00164

**Appendix. School District Guidelines for the Schedule of Daily Content Allocation for K-5**

**90:10 Dual Language Immersion**

Total: 375 minutes    **Partner Language**    **English**

%	K (90:10)	1 <sup>st</sup> (80:20)	2 <sup>nd</sup> 70:30)	3 <sup>rd</sup> (60:40)	4 <sup>th</sup> (50:50)	5 <sup>th</sup> (50:50)
<b>Minutes</b>	Language	Language	Language	Language	Language	Language
	Arts	Arts	Arts 130	Arts 90	Arts 85	Arts 85
	150	130				
	minutes					
	Reading=105	Reading =90	Reading =90			
	Writing=45	Write=40	Write=40			
	Math 80	Math 80	Math 80	Math 60	Math 20	Math 20
Science/ Social	Science/ Social		Science/ Social	Science/ Social	Science/ Social	
Studies 40	Studies 30		Studies 30	Studies 45	Studies 45	

Writing Units alternate between Partner Language and English



					Language Arts 60	Language Arts 60
					Math 60	Math 60
		English Language Development 30	English Language Development 30	English Language Development 30	English Language Development 30	English Language Development 30
	English Language Development 30	English Language Development 30	Language Arts 30	Language Arts 70		
		Language Arts 30	Science/ Social Studies 30	Math 20		
Special classes, such as art, music, technology, etc. 30 minutes (English, Not Sheltered)						
Lunch 45 minutes (Language flexible)						



Table 1. Summary of Two-way Dual Language Programs in the Study

<b>Program Type</b>	<b>Native Language of Students</b>	<b>% of Instruction in Partner Language</b>	<b>Partner Languages</b>	<b>Schools (Elem, Middle, High)</b>	<b>Students in 2012-13 (and % of total)</b>
90:10 Two-Way	≈ ½ English ≈ ½ Partner Language	90% in Grade K	Spanish	7 ES	1,644 (42.6%)
		80% in Grade 1		3 MS	
		70% in Grade 2		2 HS	
90:10 Two-Way		60% in Grade 3	Russian	1 ES	193 (5.0%)
		50% in Grades 4- 5		1 MS	
		2 periods in MS			
		1-2 periods in HS			

Table 2. Numbers and Types of Class Periods Observed Each Year

<b>Class Type</b>	<b>Year 1</b>	<b>Year 2</b>
<b>Two-way partner language</b> <i>Includes Spanish and Russian dual language immersion classes taught in partner language</i>	23	75
<b>English</b> <i>Includes English classes in dual immersion programs and traditional English-only</i>	33	0
<b>Total</b>	56	75

Table 3. Average Ratings of Observed Teaching Practices in Two-way Dual Language Classes

<b>Instructional Practices</b>	<b>Average Rating</b>
	4 = completely evident 3 = mostly evident 2 = somewhat evident 1 = slightly evident 0 = not at all evident
<b>Lesson Preparation</b>	
Lesson objectives clearly defined, displayed, and reviewed with students	3.41
<b>Building Background</b>	
Links explicitly made between past learning, experiences, and new concepts	3.32
Key vocabulary emphasized (introduced, written, repeated, highlighted)	3.50
<b>Comprehensible Input</b>	
Clear explanation of academic tasks	3.55
A variety of techniques used to make input comprehensible (modeling, visuals, hands-on activities, demonstrations, gestures, body language, voice modulation and speed, etc.)	3.33
<b>Learning Strategies</b>	
A variety of questions or tasks that promote higher-order thinking skills (literal, analytical, and interpretive questions)	3.23
<b>Interaction</b>	
Frequent opportunities for interaction and discussion between	

teacher/student and among students, which encourage elaborated responses about lesson concepts	3.27
Sufficient wait time for student responses consistently provided	3.55
<b>Practice and Application</b>	
Activities provided for students to apply language and content knowledge in the classroom independently or in groups	3.50
Lessons (including homework, if applicable) integrate all language skills (reading, writing, speaking, listening) <i>(A "4" indicates that all four skills were present; a "3," that three were present, etc.)</i>	3.86
<b>Lesson Delivery</b>	
Lesson delivery clearly supports lesson objectives	3.41
<b>Review and Assessment</b>	
Regular feedback provided to students on their output (language, content, work)	3.68

Figure 1. Teachers' Use of the Partner Language in Speaking to Students During Lessons

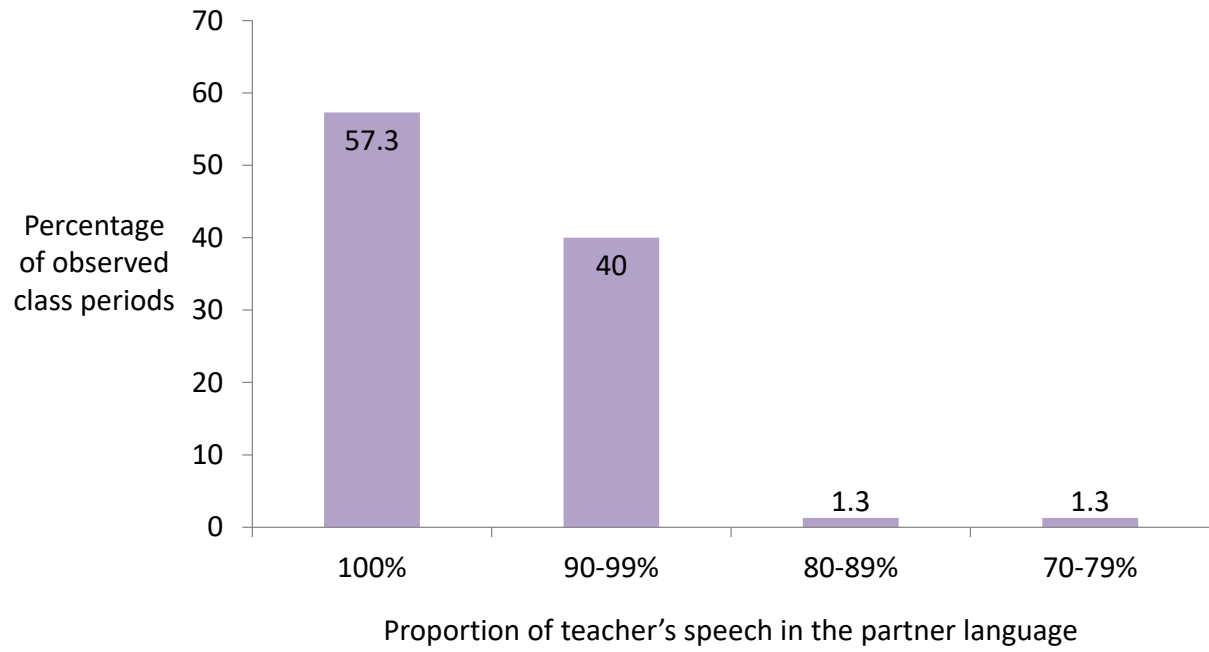


Figure 2. Students' Use of the Partner Language in Speaking to Teacher During Lessons

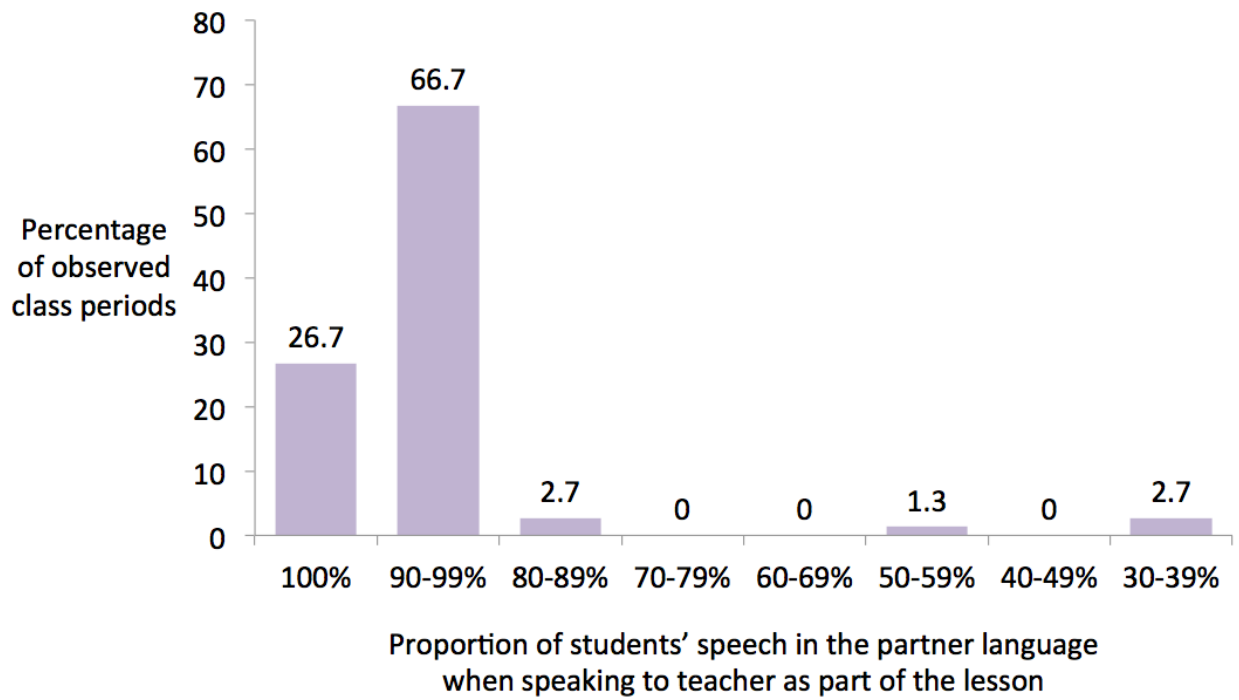




Figure 3. Students' Language Use in Speaking to Peers in Partner Language Lesson Activities

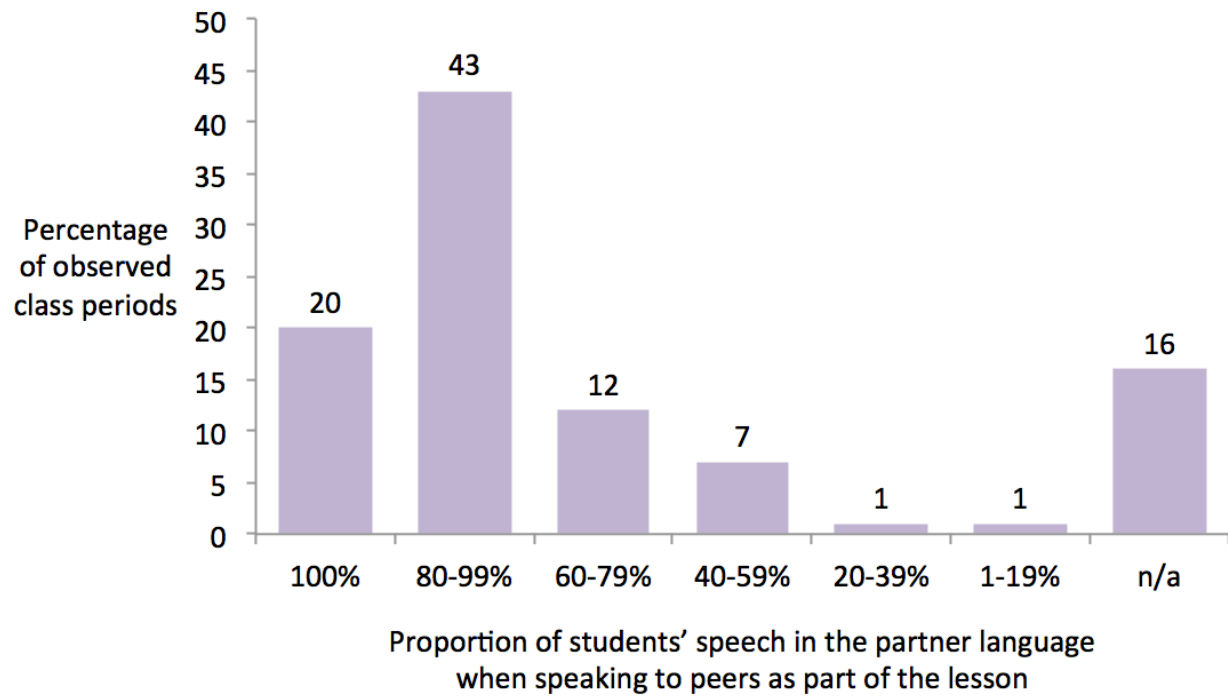


Figure 4. Most Common Length of Speech Asked for as Part of the Lesson

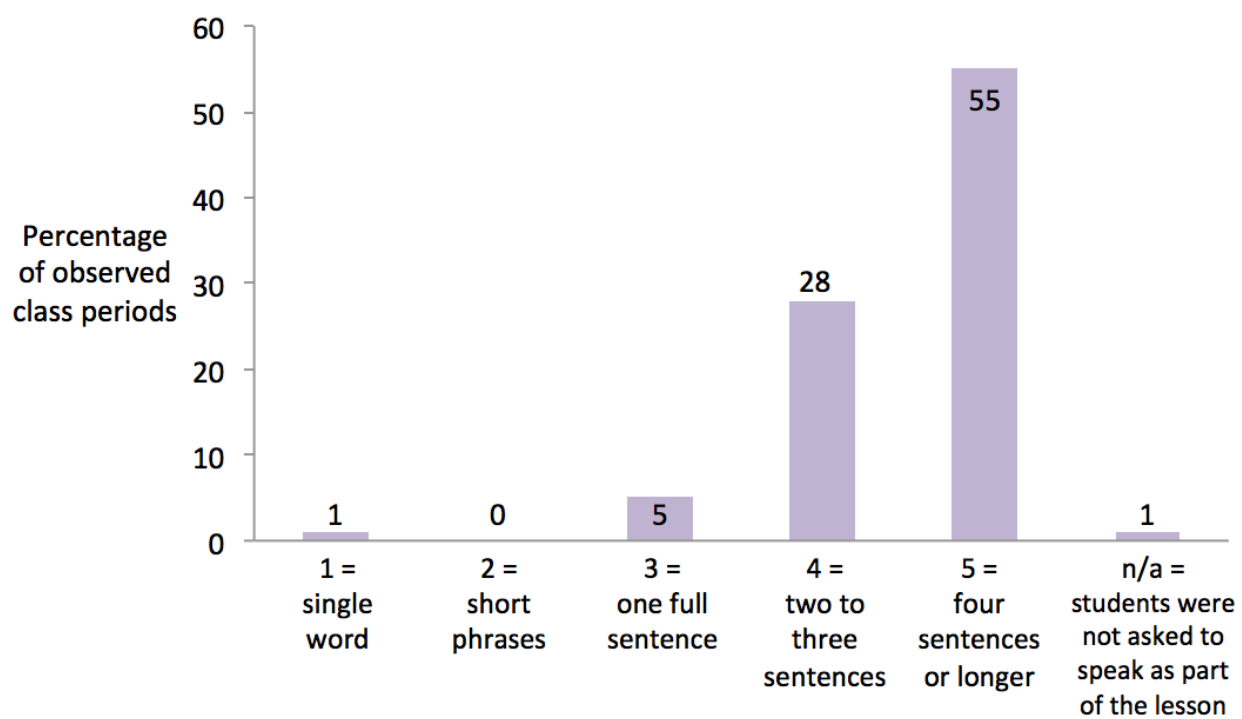


Figure 5. Length of Greatest Opportunity to Write as Part of the Lesson

