

BEAVERTON SCHOOL DISTRICT

English Language Development Minutes, Models, and Outcomes

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Beaverton School District is home to 10 percent of all K–12 public school English Language Learner (ELL) students in Oregon. These students bring substantial assets such as bilingualism and biculturalism to communities and classrooms, yet their educational achievement is often lower than that of their non-ELL peers. To address this, Beaverton School District partnered with Education Northwest to identify the English language development (ELD) program models that are most effective at improving ELL student educational outcomes and the amount of instructional time each program model requires to be effective.

Summary of findings

We found that ELL students in Beaverton received an average of 47 minutes of direct ELD instruction per day in the 2016-17 school year. However, minutes of ELD instruction were negatively correlated to student performance on English language proficiency tests, so providing more ELD instruction time without other changes to instruction is not likely to improve assessment outcomes among ELL students.

We also found that elementary ELL students in dual language and co-teaching programs started kindergarten with lower levels of English language proficiency than their peers in pull-out programs and those whose parents waived ELD services. However, ELL students in dual language and co-teaching programs made greater grade-to-grade English language proficiency growth compared to students in pull-out programs and students whose parents waived ELD services. This faster growth allowed ELL students in the dual language and co-teaching programs to catch up with their peers by the end of elementary school.

This analysis accounts for many of the factors that may influence English language acquisition, such as initial English language proficiency, demographic characteristics, and socioeconomic status. However, there are other important factors that we could not account for, such as quality of instruction. We encourage readers to use their experience, expertise, and careful thinking when interpreting these findings.

Our findings suggest that dual language and co-teaching programs are more likely to promote long-term English language acquisition than pull-out programs, and that there are no advantages to providing more than 50 minutes of ELD instruction time.

IDENTIFYING AND ADOPTING SIX ELL PROGRAM MODELS

In 2015, educators from the Beaverton School District and researchers from Education Northwest convened a work group to choose six evidence-based ELL program models that were appropriate for the district’s ELL student population. The work group created six “road maps” that describe each of the program models and define how they should be implemented in schools and classrooms to be effective.¹

To ensure that all ELL students have access to core content, such as science and mathematics, as well as support for their English language development, the Beaverton School District Multilingual Department mandated that every school in the district select one or more of the six program models described below (table 1).

Table 1. ELL program models used in the Beaverton School District

	Access to core content	ELD	School Level
Pull-out programs are common in elementary (K–5) schools. These programs pull ELL students out of English-dominant classrooms to attend a daily block of time that is devoted to a targeted, intensive ELD session.		✓	Mostly elementary
Co-teaching provides ELD instruction within the student’s content-area, main-stream, or English-dominant classroom. Push-in teachers usually support the classroom teacher, working only with ELL students; collaborative teachers are equal partners and teach all students.	✓	✓	Mostly elementary
ELD class period is common in secondary schools (grades 6–12) and provides ELD instruction during a class period that may carry course credit.		✓	Mostly secondary
Sheltered instruction provides an inclusive environment for ELL students to learn grade-level content in the same classrooms as their non-ELL peers through instruction that utilizes techniques to ensure content is comprehensible.	✓		Both elementary and secondary
Newcomer programs are designed to meet the educational and transitional needs of newly arrived immigrants. These programs focus on native language literacy, second language literacy, and the basic survival English skills needed to navigate a school setting.	✓	✓	Mostly secondary
Dual language or bilingual programs develop literacy in English and a partner language, and students study academic subjects in both languages.	✓	✓	Both elementary and secondary

¹ See, for example, Beaverton’s ELL Program Road Maps Introduction (2016).
https://www.cosa.k12.or.us/sites/default/files/images/ell_program_roadmaps_intro.pdf

EXAMINING THE EFFECTIVENESS OF PROGRAM MODELS AND INSTRUCTIONAL MINUTES

Our next step was to compare how well Beaverton ELL students develop English language proficiency in each of the program models that provide ELD and to identify the amount of instructional time (in minutes) each program requires to be effective.

Specifically, we examined:

- The relationship between the amount of time ELL students in the district receive ELD instruction and their performance on English language proficiency and English language arts assessments
- The relationship between ELD program models and elementary ELL student performance on English language proficiency and English language arts assessments

We used regression analysis to examine the relationship of program model or instructional time to student performance

Regression allows us to estimate the contribution of each program model or each minute of instruction to student learning based on students' performance on state standardized achievement tests. It compares student scores while accounting for other factors, such as prior achievement, language proficiency, demographic characteristics, as well as eligibility for special education, talented and gifted programs, and the federal school lunch program.

This analysis compares students at different grades and proficiency levels, so we cannot directly compare scores. Instead we use standard scores, which illustrate the distance between groups of students on a normal distribution. One standard score is the same as a standard deviation and translates to about 34 percentile points above or below the mean.

A technical appendix to this report provides additional explanations and data to support our findings. It can be accessed online:

➤ <https://bit.ly/2J1iWhL>

To conduct this analysis, we identified all current and former ELL students attending Beaverton elementary (K–5) and secondary (6–12) schools from 2015-16 to 2017-18. Next, working with school staff members, we identified each student's ELD program model and the number of minutes of ELD instruction they received. We then linked this information to the district's administrative dataset, which provided important information on students' demographic characteristics, schools, grades, and test scores. (Table A1 in the online appendix provides more details on the data used for this analysis.)

CHARACTERISTICS OF BEAVERTON SCHOOL DISTRICT'S ELL STUDENTS

Most of Beaverton's 4,757 ELL students in 2016-17 were concentrated in the elementary grades, with more than half of the total population in grades K–3. In 2016-17, ELL students in Beaverton spoke 80 unique languages. Spanish was the most prevalent home language (spoken by 3,073 ELL

students), followed by Arabic (338 ELL students) and Japanese (148 ELL students). Additionally, 25 percent of ELL students were eligible for special education and 82 percent were eligible for the federal school lunch program.

THE MOST COMMON ELD PROGRAM MODELS IN BEAVERTON SCHOOL DISTRICT

Beaverton’s ELL students receive varying amounts of ELD support from different ELD program models, depending on the school they attend and their level of English language proficiency. In 2016-17, most of Beaverton’s ELL students participated in four ELD program models: co-teaching, ELD class period, pull-out, or dual language. Some ELL students did not receive ELD services because their parents waived services (figures 1 and 2).

Figure 1. ELL students in elementary schools participated most often in co-teaching and pull-out programs

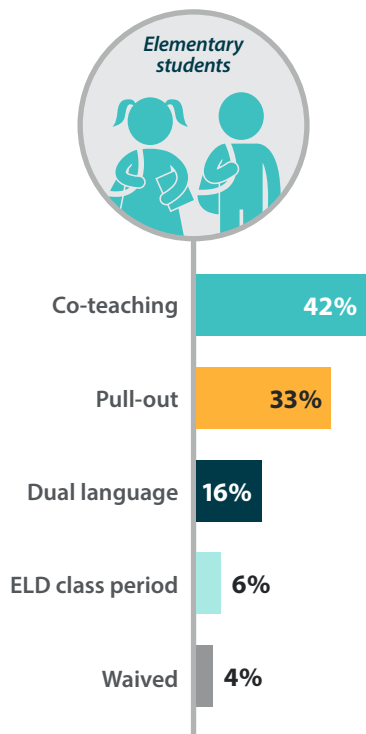
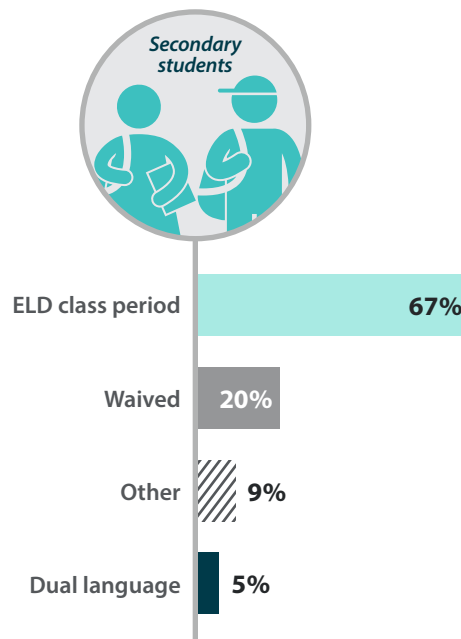


Figure 2. ELL students in secondary schools participated most often in ELD class period programs



Source: Education Northwest’s analysis of 2016-17 ELL student data from the Beaverton School District.

About a quarter (24% in 2016-17) of students received ELD support from more than one ELD program model (see table A2 in the appendix). For example, a small group of students (2%) received both co-teaching and pull-out support. Education Northwest worked with the district to create a set of decision rules to place students in one of the four ELD program models (see box A1 in the appendix). Due to their small numbers, newcomer students (N = 21 in 2016-17) were excluded from this analysis.

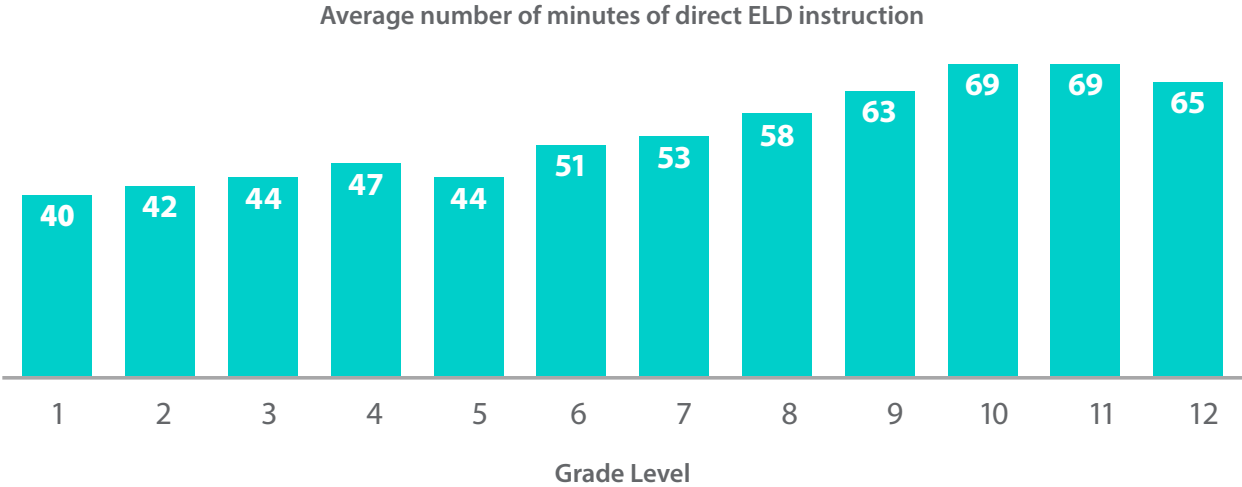
ENGLISH LANGUAGE DEVELOPMENT MINUTES AND OUTCOMES

To identify the amount of time ELD instruction requires to be effective, we analyzed the relationship between the number of minutes ELL students received direct ELD instruction and their performance on the ELPA21 English language proficiency assessment and the Smarter Balanced English language arts assessment in 2016-17.

Students received an average of 47 minutes of ELD instruction per day in 2016-17

On average, students received ELD instruction for about one class period, or 47 minutes. As students' grade level progressed, the number of minutes dedicated to ELD instruction generally increased (figure 3).

Figure 3. The average number of minutes of ELD students received increased by grade level



Note: Kindergarten is not included because English language proficiency levels were unavailable for those students.
Source: Education Northwest's analysis of 2016-17 ELL data from Beaverton School District (N = 4,757).

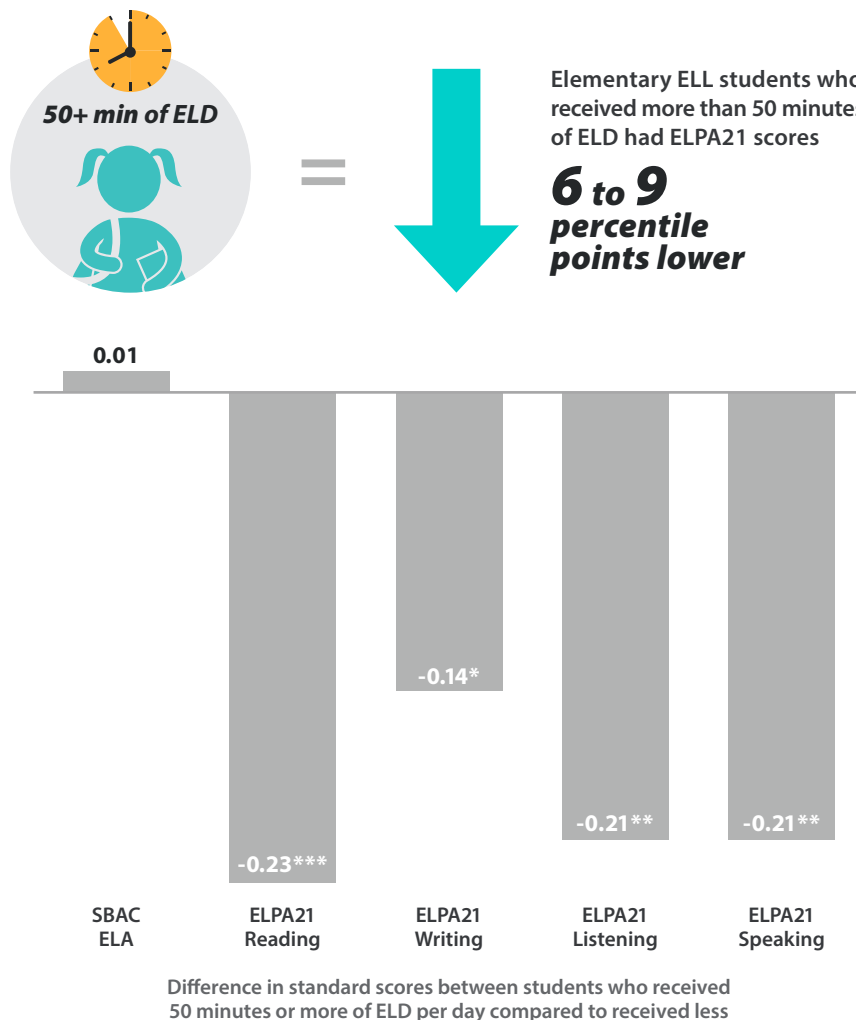
Minutes of ELD instruction also differed by program model. ELL students in co-teaching and ELD class period programs received more ELD instruction per day (54 and 52 minutes, respectively) than those in dual language (37 minutes) and pull-out (34 minutes) programs. Similarly, minutes of ELD instruction differed by English language proficiency level, with students at the beginning level ("emerging," 59 minutes per day) receiving 15 minutes more per day than those at the next level ("progressing," 44 minutes per day).

More minutes of ELD instruction were negatively correlated to student performance on English language proficiency tests

Students who received more minutes of ELD instruction in 2016-17 generally had lower English language proficiency assessment scores on the ELPA21 assessment than their peers who received fewer minutes of ELD instruction.

Regardless of demographic characteristics or prior achievement, elementary ELL students² who received more than 50 minutes of ELD instruction had significantly lower English language proficiency scores on the ELPA21 assessment in reading, writing, listening, and speaking compared to students who had less than 50 minutes of ELD instruction (figure 4).

Figure 4. Elementary ELL students who received more minutes of ELD instruction had lower English language proficiency assessment scores than their peers who received fewer minutes



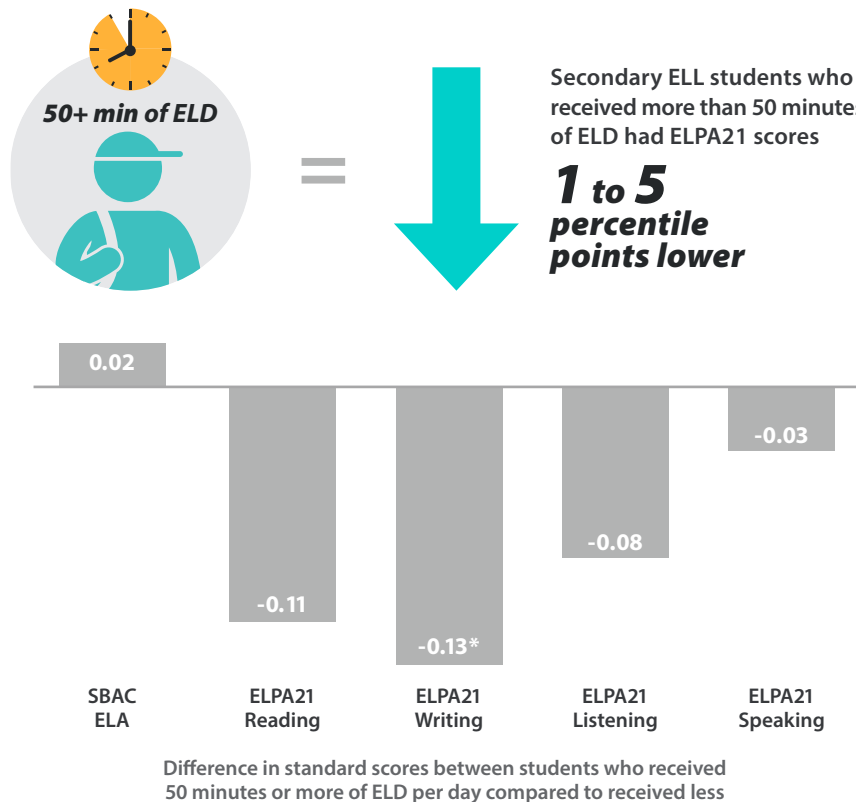
*Significant at $p < 0.05$, ** significant at $p < 0.01$, *** significant at $p < 0.001$.

Source: Education Northwest's analysis of 2015-16 to 2016-17 ELL student data from Beaverton School District.

²Kindergarten is the first time most students take a full English language proficiency assessment. Therefore, we could not calculate changes in English language proficiency scores for ELL students in kindergarten.

Similarly, secondary students who received 50 minutes or more of ELD instruction had significantly lower English language proficiency scores on the ELPA21 assessment in writing compared to their peers who received less than 50 minutes (figure 5)

Figure 5. Secondary ELL students who received more minutes of ELD instruction had lower English language proficiency reading scores than their peers who received fewer minutes



*Significant at $p < 0.05$, ** significant at $p < 0.01$, *** significant at $p < 0.001$.

Note: These figures show the difference in state test scores in standard deviations among students who received 50 minutes or more of ELD per day compared to their peers who received fewer than 50 minutes of ELD per day. The results control for difference in prior test scores; ELD program type; demographic characteristics (race/ethnicity, gender, and home language); attendance rate; and eligibility for the federal school lunch program. We also controlled for grade among secondary students. Special education students and newcomers were excluded from the analysis. Tables A4 and A6 in the appendix provide full regression results.

Source: Education Northwest's analysis of 2015-16 to 2016-17 ELL student data from Beaverton School District.

These results indicate that providing more than one class period (50 minutes) of ELD instruction is not related to improved assessment outcomes among ELL students, and in some cases may be associated with worse English language proficiency outcomes. This finding held true at all grades and English proficiency levels and even after accounting for student demographics, special education eligibility, and ELD program model.

However, dual language students who received more than 50 minutes of ELD instruction had slightly—but not significantly—more positive English language proficiency assessment outcomes than those who received less than 50 minutes of instructional time.

Two limitations may affect these findings

First, we were not able to account for all factors that influence English language proficiency or English language arts test results. For example, we cannot account for the quality of instruction.

Second, the data we received may not always accurately reflect how many minutes of ELD instruction individual students truly received. District leaders will need to bring their expertise and careful thinking to their interpretations of the data.

ENGLISH LANGUAGE DEVELOPMENT PROGRAM MODELS AND OUTCOMES

The next step of our research was to compare how ELL students in grades 1–5 develop English language proficiency in different ELD program models. We were unable to reliably compare ELD program models in grades 6–12 because only one program model—ELD class period—had a substantial number and percentage of students participating in both years of the study.

To determine how the different ELD program models relate to elementary ELL students' performance on assessments, we first compared student's grade-to-grade English language proficiency growth between ELD program models from 2015-16 to 2017-18. Next, we compared the percentage of students who were reclassified as monitored or former ELL students or were on track to reclassification. Finally, we examined how students in different ELD program models performed on the Smarter Balanced English language arts assessment.

We compared the average grade-to-grade growth between ELD program models in the four English language proficiency domains—reading, writing, listening, and speaking. After accounting for differences between students, we found that elementary ELL students in dual language and co-teaching programs demonstrated higher average grade-to-grade English language proficiency growth from 2015-16 to 2017-18, compared to students in pull-out programs and students whose parents waived services.

Elementary ELL students in dual language and co-teaching programs demonstrated higher English language proficiency growth than their peers

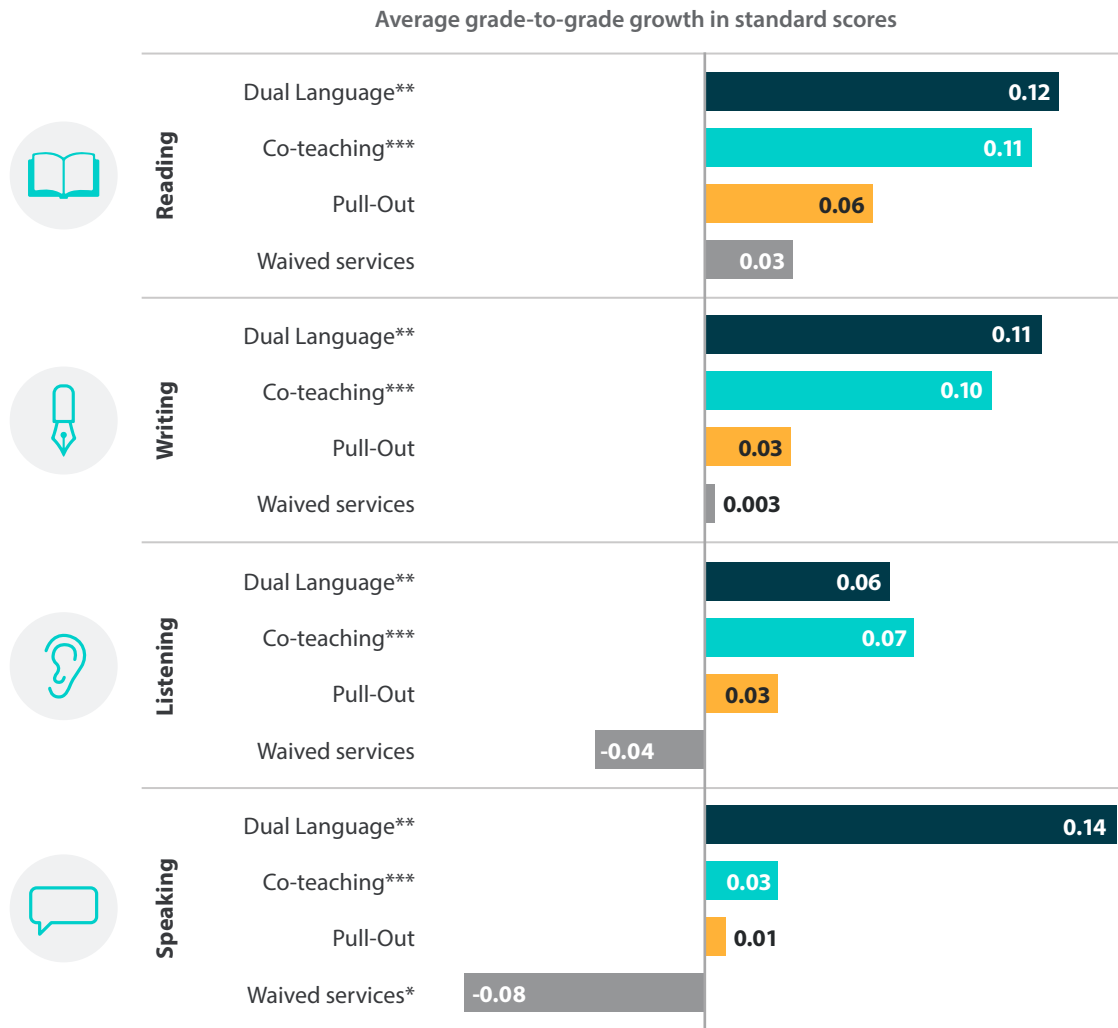
Dual language ELL students showed significantly more grade-to-grade growth in reading, writing, listening, and speaking compared to students in pull-out programs. From 2015-16 to 2017-18 the English language proficiency of students in dual language programs grew, on average, double the amount of students in pull-out programs (figure 6).

Figure 6. Elementary ELL students in dual language and co-teaching programs demonstrated higher grade-to-grade English language proficiency growth than students in ELD pull-out programs or those whose parents waived services



Grade-to-grade English language proficiency growth of elementary ELL students in dual language and co-teaching programs grew

1 to 6 percentile points more



*Significant at $p < 0.05$, ** significant at $p < 0.01$, *** significant at $p < 0.001$.

Note: This figure shows the expected standardized ELPA21 scores for each language domain, accounting for student race/ethnicity, gender, attendance, interrupted formal education, as well as eligibility for free or reduced-price lunch, special education, and talented and gifted programs. Table A8 in the appendix provides full regression results.

Source: Education Northwest's analysis of 2015-16 to 2017-18 ELL student data from Beaverton School District.

Similarly, elementary ELL students in co-teaching programs showed significantly more growth in reading, writing, and listening compared to students in pull-out programs. While students in co-teaching programs did not show the same growth as their peers in dual language, it was still significantly larger than the grade-to-grade growth of ELL students in pull-out.

Finally, we found that students whose parents waived ELD services showed the lowest grade-to-grade growth compared to ELL students in any ELD program model. However, the difference was statistically significant only in the speaking domain.

How did we measure growth?

We created a regression model that calculated the typical amount that each student would progress each year between kindergarten and grade 5 in English language proficiency. This model measured the effect of each ELD program model on student outcomes and accounted for their initial English language proficiency level and student characteristics such as home language, gender, and eligibility for the federal school lunch program or special education.

However, 30 percent of students changed their ELD program model from 2016-17 to 2017-18. To ensure that our analysis took this into account, we conducted two different kinds of analysis. The first method analyzed the effect of each student's 2016-17 ELD program model regardless of whether they changed program models the next year (see table A8 in the appendix). The second method excluded students who changed ELD program model from the analysis (see table A9 in the appendix).

There were slight differences between the two analyses. However, the trends remained the same, with students in dual language and co-teaching programs outperforming their peers in other program models.

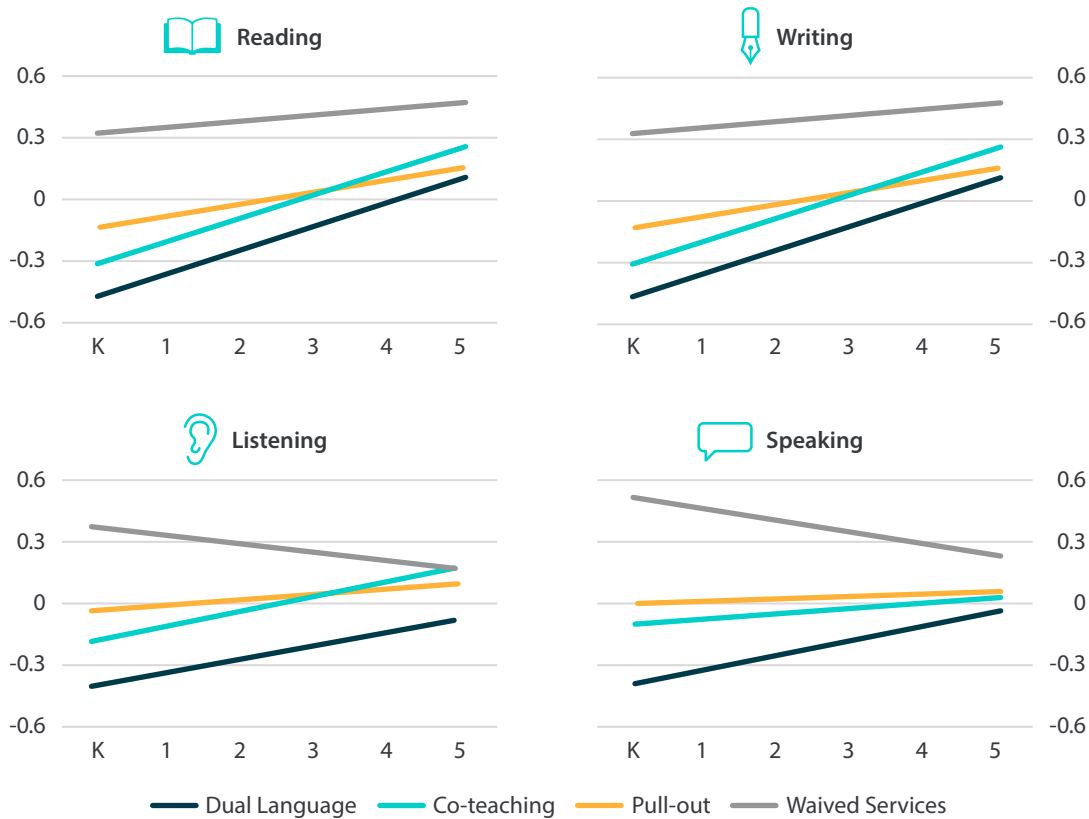
Students in pull-out programs and those whose parents waived services had higher initial levels of English language proficiency than their peers, but this advantage disappeared by the end of elementary school

Another way of looking at English language proficiency growth is to compare students' typical English language proficiency score by grade between ELD program models (using standard scores, so we can compare students at different proficiency levels).

This comparison shows that elementary ELL students in pull-out programs and those whose parents waived ELD services began kindergarten, on average, with higher levels of English language proficiency in all four language domains than their peers in dual language or co-teaching programs.

However, this advantage did not last. Students in dual language and co-teaching programs had higher grade-to-grade English language proficiency growth than their peers, which allowed them to catch up by the end of elementary school (figure 7).

Figure 7. Elementary ELL students in dual language and co-teaching programs demonstrated higher English proficiency growth than students in pull-out programs or those whose parents waived services



Note: This figure shows the expected standardized ELPA21 scores for each language domain, accounting for student race/ethnicity, gender, attendance, and interrupted formal education, as well as eligibility for the federal school lunch, special education, and talented and gifted programs.

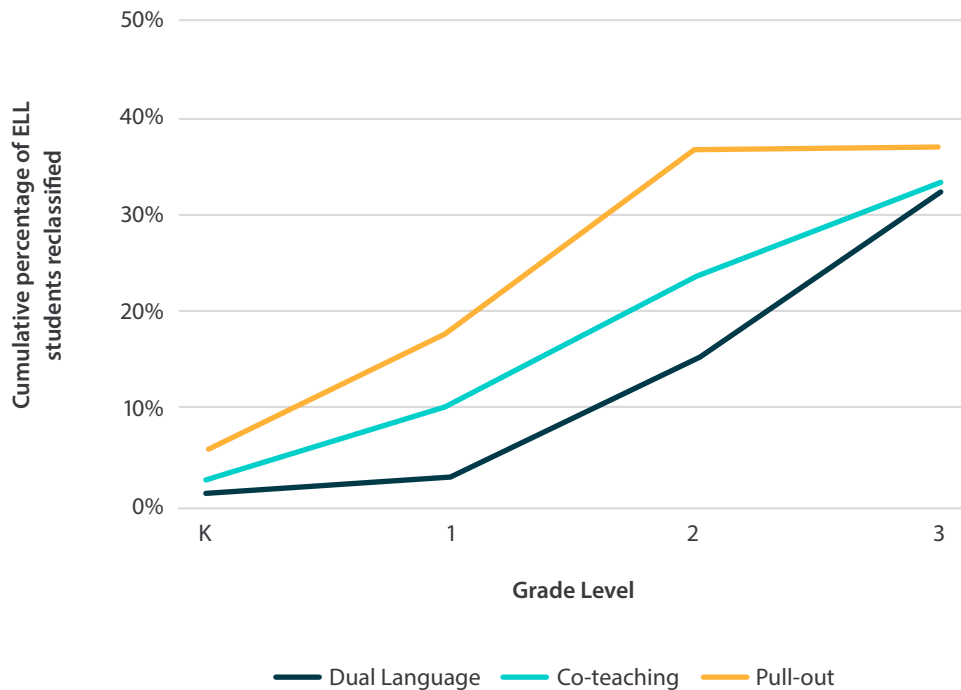
Source: Education Northwest's analysis of 2015-16 to 2017-18 ELL student data from Beaverton School District.

ELL students in pull-out programs were more likely than their peers to be reclassified in grades 1 and 2 because of their higher levels of English language proficiency, but students in dual language and co-teaching programs were almost as likely to be reclassified by grade 3

This finding is also linked to the higher growth in English language proficiency for students in dual language and co-teaching programs. We found that 37 percent of students in pull-out programs who were identified as ELL students in kindergarten were reclassified by grade 2, compared to fewer in co-teaching (24%) and dual language (15%) programs. However, by grade 3 a much higher percentage of ELL students in co-teaching (34%) and dual language (33%) programs were reclassified, while the percentage had not changed for students in pull-out programs (figure 8).

Other studies have identified similar patterns, with ELL students in dual language programs starting with lower English language proficiency scores than those in English immersion programs and surpassing them in late elementary or middle school (Umansky, Valentino, & Reardon, 2015; Valentino & Reardon, 2015).

Figure 8. A high percentage of ELL students in pull-out programs were reclassified in early elementary grades, but their peers in dual language or co-teaching programs caught up with them by grade 3



Note: This figure shows the cumulative percent of ELL students reclassified by ELD program. Data in this figure are descriptive and do not account for differences between students. The sample was restricted to students who were identified as an English language learner in kindergarten between 2015-16 to 2017-18.

Source: Education Northwest's analysis of 2015-16 to 2017-18 ELL student data from Beaverton School District.

There were no statistically significant differences between elementary ELD program models in the percentage of students who were on track to English language proficiency

The Oregon Department of Education established guidelines in 2018 to determine whether ELL students were on track to being English language proficient. An ELL student is considered on track if they are reclassified, are eligible to be reclassified, or meet expectations for growth on three of the four language domains each year.³ There are different expectations for growth for students with disabilities and students with interrupted formal education.

³These guidelines are available on the Oregon Department of Education website (retrieved January 2019) https://www.oregon.gov/ode/schools-and-districts/reportcards/reportcards/Documents/on_track_to_ELP.pdf

Overall, 46 percent of elementary school students in Beaverton who were identified as ELL in 2014-15 to 2016-17 met the on-track-to-proficiency expectations in 2017-18. There were no significant differences between the three ELD program models at the elementary level. However, a slightly higher percentage of students who participated in dual language and pull-out programs were on track to English language proficiency (49% each) than students in co-teaching programs (44%). There were too few students whose parents waived ELD services to include them in the analysis without compromising their anonymity.

Students in dual language outperformed similar peers on the Smarter Balanced English language arts assessment

Finally, we compared ELL students' outcomes on the Smarter Balanced English language arts assessment. To do this, we restricted the sample to students who were classified as ELL in kindergarten during the 2014-15 school year and matched students using a statistical technique (propensity score matching) to their peers. This allowed us to compare groups of students who appear to be similar in all observable ways except their ELD program model.

We found that ELL students in dual language programs performed significantly higher on the grade 3 English language arts assessment than similar students in pull-out programs. Students participating in co-teaching programs performed slightly, but not significantly, higher than similar students in pull-out programs on the grade 3 English language arts assessment (see table A10 in the appendix).

IMPLICATIONS

1

Dual language and co-teaching programs are more likely to promote long-term English language acquisition than pull-out programs or waiving ELD services.

These findings suggest that—among elementary school ELL students in Beaverton—dual language and co-teaching programs are more likely to promote long-term English language acquisition than pull-out programs or waiving ELD services. These outcomes are not unique to Beaverton. They are corroborated by other studies that show, for example, that dual language instruction improves English language outcomes for ELL students in Oregon (Steele et al., 2017) and California (Umansky, Valentino, & Reardon, 2015; Valentino & Reardon, 2015) at higher rates than English immersion instruction.

2

There are substantial benefits of both dual language and co-teaching programs that were not examined in this study.

In addition, there are substantial benefits of both dual language and co-teaching programs that were not examined in this study. Bilingualism and biliteracy are major outcomes of dual language programs and are measured by some states, including Oregon, upon graduation. Proficiency in two or more languages also brings benefits that extend beyond academic outcomes, such as more developed executive control (Bialystok, 2011) and increased earnings (Callahan & Gándara, 2014).

There are still other benefits that may be equally important but are not commonly measured, such as greater inclusion among ELL and native English-speaking students. These students learn together in co-teaching and some dual language programs but are isolated from one another in pull-out and ELD class period programs.

3

Providing more than 50 minutes of ELD instruction is not related to improved assessment outcomes among ELL students.

These findings also suggest that providing more than one class period—or 50 minutes—of ELD instruction is not related to improved assessment outcomes among ELL students. This means that providing more ELD instruction time without other changes to instruction is not likely to improve assessment outcomes among ELL students.

We hope these findings provide Beaverton leaders and educators with actionable policy and program considerations. The findings suggest that Beaverton leaders and educators may wish to consider gradually replacing pull-out programs in elementary schools with dual language and co-teaching programs. They also suggest that Beaverton schools may want to consider limiting ELD instructional time to approximately 50 minutes.

However, all research has limitations. We were not always able to account for all factors—such as quality of instruction, parent education level, or student motivation—that may influence English language proficiency. In addition, our data may not accurately reflect how many minutes of ELD instruction individual students truly received. **We encourage readers to use their expertise and experience to critically interpret these findings.**

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About Education Northwest

Founded as a nonprofit organization in 1966, Education Northwest builds capacity in schools, families, and communities through applied research and development.

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