

1-13-2020

## Comparison of English Language Development and Academic Outcomes of SEAL Students in Bilingual versus Structured English Immersion Programs

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### Brief 10 Recommended Citation:

Cassidy, S., Saldivar, R, & Ross, A. (2020). Comparison of English language development and academic outcomes of SEAL students in bilingual versus structured English immersion programs. In Center for Equity for English Learners, Loyola Marymount University & Wexford Institute, *Sobrato Early Academic Language (SEAL) Model: Final report of findings from a four-year study (Section 4, Brief 10)*. doi: <https://doi.org/10.15365/ceel.seal2020>

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## Student Outcomes: Study #2

### Comparison of English Language Development and Academic Outcomes of SEAL Students in Bilingual versus Structured English Immersion Programs



#### Introduction to the SEAL Model and the 4-Year Research and Evaluation Effort

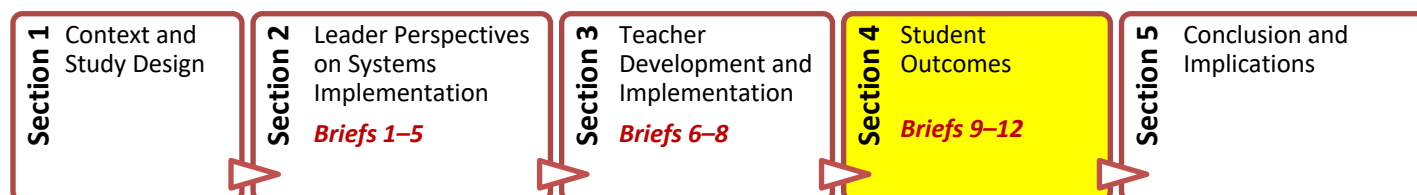
The [Sobrato Early Academic Language Model \(SEAL\)](#) is a preschool through third grade model that powerfully develops students' language, literacy, and academic skills within the context of a whole-school initiative. This intensive approach to language and literacy education is woven into all aspects of the school day where English Learners and native English students learn together. The Model was first piloted in three schools in the Silicon Valley and an initial evaluation of the Model showed significant impact on student achievement, teacher practice, and parent literacy activities. As a result of these pilot findings, SEAL developed a Replication Model, a comprehensive whole-school reform that is implemented systematically and that includes teachers, coaches, principals, district leaders, and families.

Loyola Marymount University's [Center for Equity for English Learners](#) and the [Wexford Institute](#) conducted an external evaluation of the SEAL preschool through third grade Replication Model from fall 2015–fall 2019. This comprehensive research and evaluation study focused on (1) Leader Perspectives and Depth of Implementation, (2) Teacher Development, and (3) Student Outcomes. Twelve districts and 67 schools across California participated. This Research and Evaluation Final Report presents findings that will allow the SEAL team to institute its short- and long-term evaluation and research agenda based on the SEAL Logic Model and desired results for project management, decision-making, refinement, and expansion.

The SEAL Research and Evaluation Final Report is comprised of five sections presented in a series of briefs (see Figure 1) to maximize usability for multiple stakeholders. This brief is part of Section 4.

#### Figure 1

*SEAL Research and Evaluation Final Report Overview*



## Section 4, Brief 10 – Research Focus

This research and evaluation brief presents findings on academic outcomes of students, identified as English Learners (EL) in Kindergarten (grade K), and who have been continuously enrolled in a SEAL school, in bilingual (BIL) or structured English immersion (SEI) programs. We report on matched samples for three groups of students that are representative of eleven<sup>1</sup> SEAL districts and 65 SEAL schools. This brief contains four parts. Part One provides an overview of the study methods and participants. Part Two includes figures and tables that summarize English language development (ELD) student outcomes. Part Three includes figures and tables that summarize English language arts and mathematics student outcomes. Part Four provides a summary of findings and implications.

### Comparison of SEAL Outcomes in Bilingual versus Structured English Immersion Programs Research and Evaluation Question

What is the difference, if any, between students in Structured English Immersion and Bilingual (including bilingual and dual-language) programs in the sample groups identified in Student Outcomes Study 1?

## Part One: Study Methods and Participants

### Purpose

The purpose of this study is to analyze and compare the academic outcomes of students, in BIL and SEI programs on the following assessments:

- *California English Language Development Test (CELDT)*, the California English language proficiency assessment was administered to English Learners (ELs) annually as a summative assessment from 2014-15 through 2016-17.
- *English Language Proficiency Assessment for California (ELPAC)*, the California English language proficiency assessment was given to ELs as a summative assessment in 2017-18 and 2018-19.
- *California Assessment of Student Performance and Progress-Smarter Balanced Assessments for English Language Arts/Literacy and Mathematics (SBAC)* was given annually to SEAL students beginning in the third grade.

### Participants

Data were collected for SEAL schools eleven districts for three student sample groups. The student data is longitudinally matched for these students as they began Kindergarten in SEAL classrooms and continued in SEAL schools through their final grade. Figure 2 presents a description of the three student sample groups utilized for this study, including their beginning and ending grade levels in the study, the year they began SEAL participation in grade K, the number of SEAL districts and schools represented in the student sample and the outcome data included in this analysis. Also shown in Figure 2 is the student cohort treatment rate which describes the amount of SEAL training their teachers received and the mean SED rate for schools represented in each sample group.

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<sup>1</sup> A total of 12 districts that participated in the SEAL Replication Model, from 2013-14 through 2018-19. Eleven of the 12 districts provided data for all years requested and are included in this analysis of data in this brief.

**Figure 2**

*SEAL Student Sample Groups*

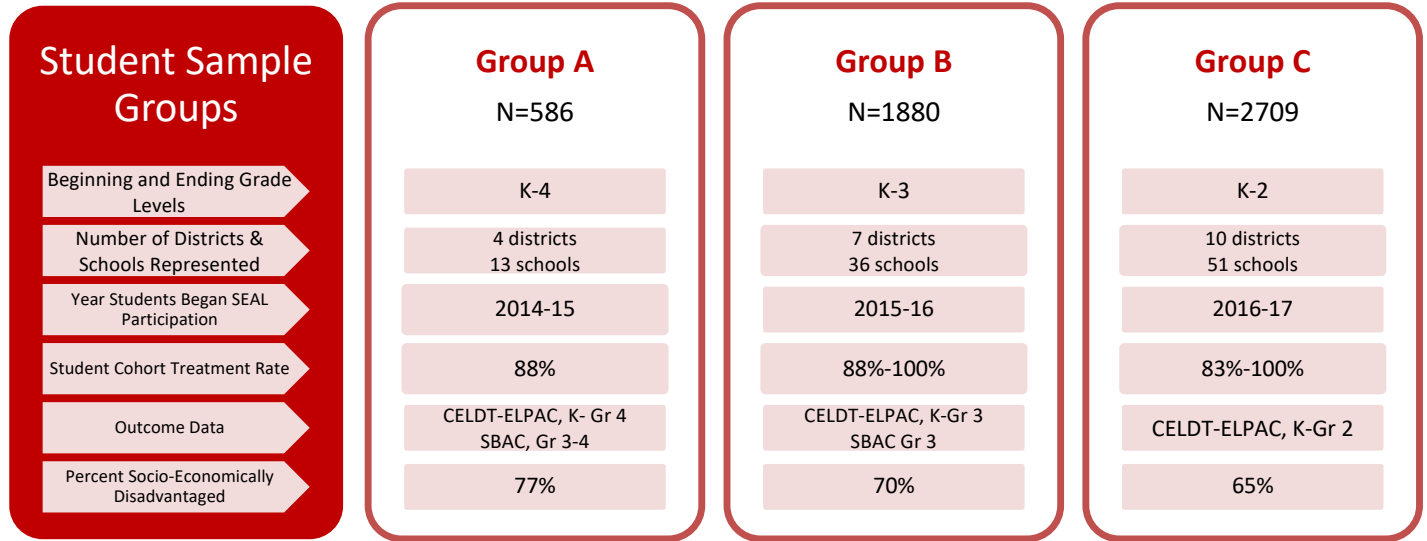


Table 3 shows the total number of students included in this analysis for each district, by student sample group. For further details related to the students in the study, including demographics, school enrollment totals, reclassification rates, and total eligible for free and reduced meals for 2018-19, please refer to Section 4 – Appendix A.

**Table 3**

*Total Number of SEAL Students by District and Evaluation Group*

District	SEAL cohort	Total number of SEAL students		
		Group A	Group B	Group C
Santa Clara USD	1	85	103	--
San Lorenzo USD	1, 2	287	574	264
Oak Grove SD	1, 2, 3	129	511	534
Redwood City SD	1, 2, 3	85	196	264
San Rafael City Schools	2, 3	--	170	381
Franklin McKinley SD	2, 3	--	123	176
Mountain View ESD	2, 3	--	203	573
Berryessa Union SD	3	--	--	138
Evergreen USD	3	--	--	92
Gilroy USD	3	--	--	129
Milpitas USD	3	--	--	158
Fillmore USD <sup>a</sup>	3	--	--	--
<b>Total</b>		<b>586</b>	<b>1880</b>	<b>2709</b>

<sup>a</sup> Student data was not available for this district and therefore is not a part of the analysis in this brief.

Schools in the study varied in their percentages of socio-economically disadvantaged<sup>2</sup> (SED) students. (SED rates for each school are listed in Section 4 – Appendix A.) SED percentages varied from 15% to 97% across

<sup>2</sup> 2018-19 school SED rates were collected from publicly available data on the California Department of Education website.

the schools in the three sample groups. Mean SED percentages were calculated for each sample group based on the SED rates for all schools in each group. The 2018-19 California SED rate was 61%, in comparison:

- Group A schools had a mean SED rate of 77%, with 11 of 12 (92%) schools above the California rate.
- Group B schools had a mean SED rate of 70%, with 20 of 33 (61%) schools above the California rate.
- Group C schools had a mean SED rate of 65%, with 24 of 48 (50%) schools above the California rate.

### *Bilingual and Structured English Language Program Instruction*

The SEAL districts listed in Table 2, offered SEI, BIL, and/or dual language instructional programs to students during the study years. The following are California Department of Education (CDE) definitions for these language acquisition programs:

- Structured English Immersion Program (SEI) – A program for, “...English learners in which nearly all classroom instruction is provided in English, but with curriculum and a presentation designed for pupils who are learning English” (Education Code [EDC], Section 306[c][3], 1998)<sup>3</sup>. Students are offered English language development and access to grade level academic subject matter content.
- Transitional Bilingual Program (BIL) – A language acquisition program for English learners that provides instruction to students utilizing English and a student’s native language for literacy and academic instruction, enabling an English learner to achieve English proficiency and meet state-adopted academic achievement goals. This program begins in grade TK and grade K, and continues through to third grade, at which time students transition to all English instruction.<sup>4</sup>
- Dual Language Immersion Program (DLI) – A program for English learners “...that provide integrated language learning and academic instruction for native speakers of English and native speakers of another language, with the goals of high academic achievement, first and second language proficiency, and cross-cultural understanding” (EDC, Section 306[c][1], 1998). This program begins in grade TK and grade K and continues to sixth grade.

Districts provided longitudinal student data that included annual program instruction information for each student. For each school year, student records indicated if the student was in a SEI, BIL, or DLI classroom. Student records were examined and assigned to one of two groups, SEI or BIL. Students with DLI program codes were assigned to the BIL group. (Section 4 – Appendix G provides a list of SEAL schools and the types of programs they offered from 2015-2019.) The following criteria were used for program assignment for each student sample group:

- Group A – SEI students have 4 or 5 years of structured English immersion instruction. BIL students have 4 or 5 years of bilingual and/or dual language immersion instruction.
- Group B – SEI students have 4 years of structured English immersion instruction. BIL students have 4 years of bilingual and/or dual language immersion instruction.
- Group C – SEI students have 3 years of structured English immersion instruction. BIL students have 3 years of bilingual and/or dual language immersion instruction.

Students in this study are Ever-ELs, a language classification that includes both EL and RFEP students. There are a total of 338 Ever-ELs in student sample Group A, 900 in Group B and 1121 in Group C. Table 4 shows the total number of Ever-EL student records selected by program type.

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<sup>3</sup> California Legislative Information. EDC Article 2., Section 306, (1998). *English Language Proficiency Assessment*.

[http://leginfo.ca.gov/faces/codes\\_displaySection.xhtml?sectionNum=306&lawCode=EDC](http://leginfo.ca.gov/faces/codes_displaySection.xhtml?sectionNum=306&lawCode=EDC)

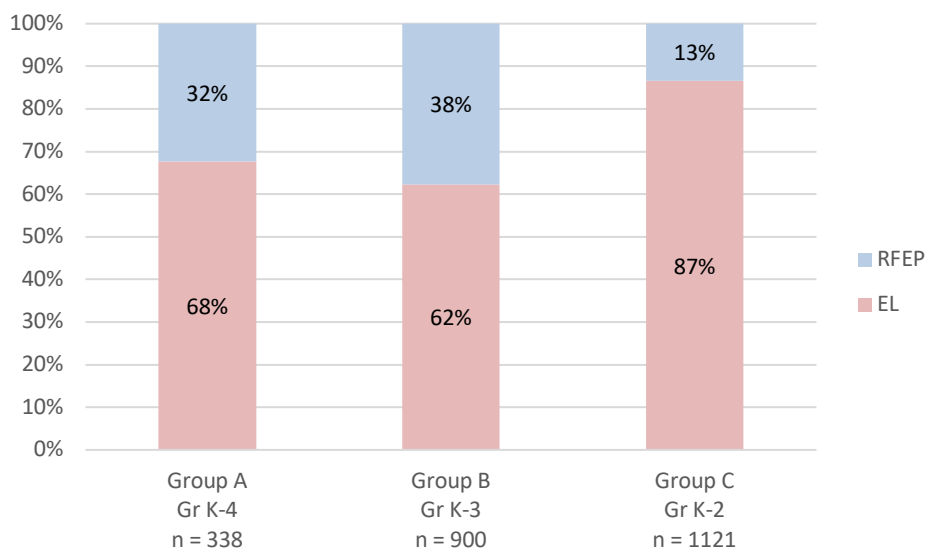
<sup>4</sup> CDE (n.d.). Language Acquisition Programs. *Description of Program Options and Goals for English Learners*.

<https://www.cde.ca.gov/sp/el/t3/languageacquisition.asp#one>

**Table 4***Number of Ever-EL Student Records Selected for Analysis by Program of Instruction*

Student sample group	Number of Ever-ELs by program type		Total
	Bilingual	Structured English Immersion	
A	123	215	338
B	231	669	900
C	108	1013	1121
Total	462	1897	2359

Figure 3 shows the group totals by language classification. All three groups are comprised mostly of EL students. Group A and B students have a similar distribution, about 2/3 EL and 1/3 RFEP. Group C students are 87% EL and 13% RFEP.

**Figure 3***2019 Language Classification for Student Records Selected for Analysis****SEAL Cohort Treatment Rate***

The student data included in this study is longitudinally matched for these students as they began Kindergarten in SEAL classrooms and continued in SEAL schools through their final grade in 2018-19. These students were enrolled in SEAL classrooms, in grade K through grade 3, with teachers that participated in the SEAL two-year professional development (PD) program. The SEAL cohort treatment rate for students was based on the amount of SEAL PD their teachers had completed. (A full description of how the treatment rate is calculated is included in Section 4 – Appendix C.) Table 2 provides a visual representation of the three student sample groups and the years in which teachers completed the two-year SEAL PD and are considered fully trained (shaded cells).

**Table 2****SEAL Cohort Treatment Rate and Teacher Training by Student Sample Group, Grade Level, and Year**

Student Sample Group	SEAL Cohort Treatment Rate	Student grade level and year				
		2014-15	2015-16	2016-17	2017-18	2018-19
A	88%	K 1 Year PD	1 2 Years PD	2 2 Years PD	3 2 Years PD	4
	100%		K 2 Years PD	1 2 Years PD	2 2 Years PD	3 2 Years PD
B	88%		K 1 Year PD	1 2 Years PD	2 2 Years PD	3 2 Years PD
	100%			K 2 Years PD	1 2 Years PD	2 2 Years PD
C	83%			K 1 Year PD	1 2 Years PD	2 2 Years PD
					K 2 Years PD	1 2 Years PD

Note. The shaded areas show grades/years in which students are in classrooms with fully trained SEAL Teachers. 2 Years of PD = fully trained.

Students in Group A, in grades K-3 had a treatment rate of 88%. They had teachers in Kindergarten who had completed only one year of the training, and teachers in grades 1 through 3 who had completed 2 years of training. The calculated training rate of Group A teachers is 88%: students were enrolled in classrooms with teachers that had 7 of 8 years of SEAL PD = 88% SEAL cohort treatment rate (2 years of SEAL PD training possible per year for each of the 4 years, Kindergarten through grade 3, makes a total of 8 years of possible PD).

Students in Group B, in grades K-3, were comprised of two subgroups, one with a treatment rate of 88% and one with a treatment rate of 100%. One subgroup had teachers that completed 88% of PD, similar to Group A. The other student subgroup had teachers who each had completed 2 years of training for each of the four years, for a total of 8 of 8 years of PD = 100% SEAL treatment rate.

Students in Group C, in grades K through grade 2, were also comprised of two subgroups. One subgroup had a teacher training rate of 100%, with teachers who had each completed 2 years of training each of the three years (grade K through grade 2), for a total of 6 of 6 possible years of training (2 years of PD training possible x 3 years = 6 years of possible PD). The training rate of the other subgroup is 83%; students were enrolled in grade K with teachers with one year of training, and in grades 1 and 2 with teachers who had completed 2 years of training for a total of training years of 5, out of 6 possible years of training (5 of 6 years of PD = 83%).

## Methods

Student assessment scores were disaggregated by program of instruction to determine ELD, English language arts (ELA), and mathematics outcomes for each student sample group. The analysis disaggregates data for students in BIL and SEI programs for each of the following

- CELDT and ELPAC results analyzed from grade K to final grade to determine ELD outcomes,
- SBAC ELA and mathematics outcomes for Groups A and B, and
- overall SBAC growth for student Group A from grade 3 to grade 4.

ELPAC outcomes are summarized by the percent of students scoring at each of the four performance levels that ranged from: 1 (*minimally developed*), 2 (*somewhat developed*), 3 (*moderately developed*), and, 4 (*well developed*). SBAC outcomes are summarized for ELA and mathematics, separately, by the percent of students scoring at each of the four SBAC levels that ranged from: 1 (*exceeded*), 2 (*met*), 3 (*nearly met*), and 4 (*not met*). English learner SBAC ELA and mathematics outcomes are also summarized by ELPAC performance levels. Significance tests were conducted to determine differences in the areas and tests indicated in Table 1.

**Table 1**  
*Summary of Significance Testing, by Student Group*

Analyses	Significance test	Student Group		
		A	B	C
<u>CELDT – ELPAC</u>				
Difference between BIL and SEI groups on pre-overall performance on CELDT in grade K	Independent samples t-Test	X	X	X
<u>SBAC ELA &amp; mathematics</u>				
Difference in pre-post performance in each group	Matched pairs t-Test	X		
Difference between the SEI and BIL groups on pre-overall performance	Independent samples t-Test	X		
Difference between the SEI and BIL groups on post-overall performance	Johnson-Neyman Procedure, One-Way ANCOVA and ANCOVA	X		

### Limitations

The limitations of this study include:

- The SEAL Replication Model implementation occurred across three cohorts of students that each began implementation during different time frames<sup>5</sup> and while the model underwent continued refinement .
- In spring 2018, California replaced CELDT, the state English language proficiency assessment, with the ELPAC. The transition included teacher training to conduct the assessments, preparation for and assessing the students, which may not have been done consistently across schools and districts.
- Beginning with the 2018-19 ELPAC administration, the threshold scale scores were adjusted by California’s State Board of Education. Therefore, performance level data for 2017-18 were recoded with 2018-19 performance level ranges in order to be able to make comparisons between the two years of data. (See Section 4 – Appendix I)

See Section 4 – Appendix B for additional limitations to the study.

<sup>5</sup> Students in this study attended schools in districts that started SEAL implementation in 2014-15 and 2015-16. Students in this study were enrolled in grade K in SEAL schools in 2014-15 (Group A), 2015-16 (Group B), and 2016-17 (Group C).



## Part Two: English Language Development Outcomes

Three analyses were conducted to determine the English language development outcomes for ELs who began in SEAL classrooms in grade K in Groups A, B, and C and remained in SEAL classrooms through 2018-19:

- An analysis of student performance of BIL and SEI subgroups, for grade K CELDT and 2018-19 ELPAC, by proficiency level.
- A comparison of BIL and SEI subgroups for grade K CELDT, to determine any significant difference between BIL and SEI.
- A comparison of BIL and SEI subgroups, for 2017-18 and 2018-19 on the ELPAC.

### Group A: ELD Growth, 2014-2019

The English language development outcomes for Group A students in BIL and SEI were summarized by performance level, with the percent of RFEP students shown as the final proficiency level for students. The analysis compared SEI and BIL group outcomes in Kindergarten on the CELDT, and their outcomes in grade 4 on the ELPAC.

Figure 4 shows that overall, Group A students in BIL improved at a greater rate than students in SEI. On their pre-assessment (grade K, CELDT), the BIL group began with 18% of students at the top two levels, while 35% of the SEI group scored at the top two levels (a difference of 17%). By grade 4 on the ELPAC, 74% of the BIL group were RFEP (24%) or scored at the top two levels on ELPAC (50%), while 84% of SEI students were RFEP (38%) or scored at the top two levels (36%), a difference of only 10%.



**Figure 4**  
*2015-2019 CELDT-ELPAC Overall English Language Development Growth by Program Group A Ever-ELs with Matched Scores (BIL, n = 120; SEI, n = 204)*

Additionally, on the CELDT in grade K, 58% of BIL students scored at *beginning* compared to 26% of SEI students (a difference of 32%). By grade 4, only 6% of the BIL group and 3% of the SEI group were at the lowest ELPAC proficiency level (a difference of 3%).

Table 5 presents descriptive statistics for the grade K (2014-15) CELDT Overall assessment for Group A EL students in BIL programs ( $n = 120$ ) and SEI programs ( $n = 204$ ). The group means were compared using an Independent Samples *t*-Test. Results showed that the SEI group performed significantly higher than the BIL group ( $p < .001$ ). The effect size of .77 indicates a moderate to large difference between the means, with the SEI group mean falling .77 standard deviations above the BIL group mean. Full results of this analysis can be found in Section 4 – Appendix N.

**Table 5**

*Descriptive Statistics for Performance on Grade K/2014-15 CELDT Overall - Group A ELs*

Group	<i>n</i>	Mean	SD	<i>t</i>	df	<i>g</i>	<i>p</i>
BIL	120	316.4	80.6	6.67	322	.77	<.001
SEI	204	369.4	61.2				

*Note.* For Hedge's *g*:  $g = .2$  is a small effect size,  $g = .5$  is a moderate effect size, and  $g = .8$  is a large effect size.

In summary, for Group A, at grade K, the SEI group scored significantly higher than the BIL group. By grade 4, some of those ELS had been reclassified to RFEP (24% of BIL and 38% of SEI). From grade K to grade 4, BIL progressed at a greater rate than did SEI, with BIL coming much closer to the SEI outcomes in grade 4 than they were in grade K, even though SEI performed significantly higher than BIL at Kindergarten.

A grade 4 (final year of study) assessment comparison could not be made for the entire group of ELs represented in Table 5 since some students in both the BIL and SEI groups were reclassified as RFEP, and therefore had no ELPAC score in grade 4.

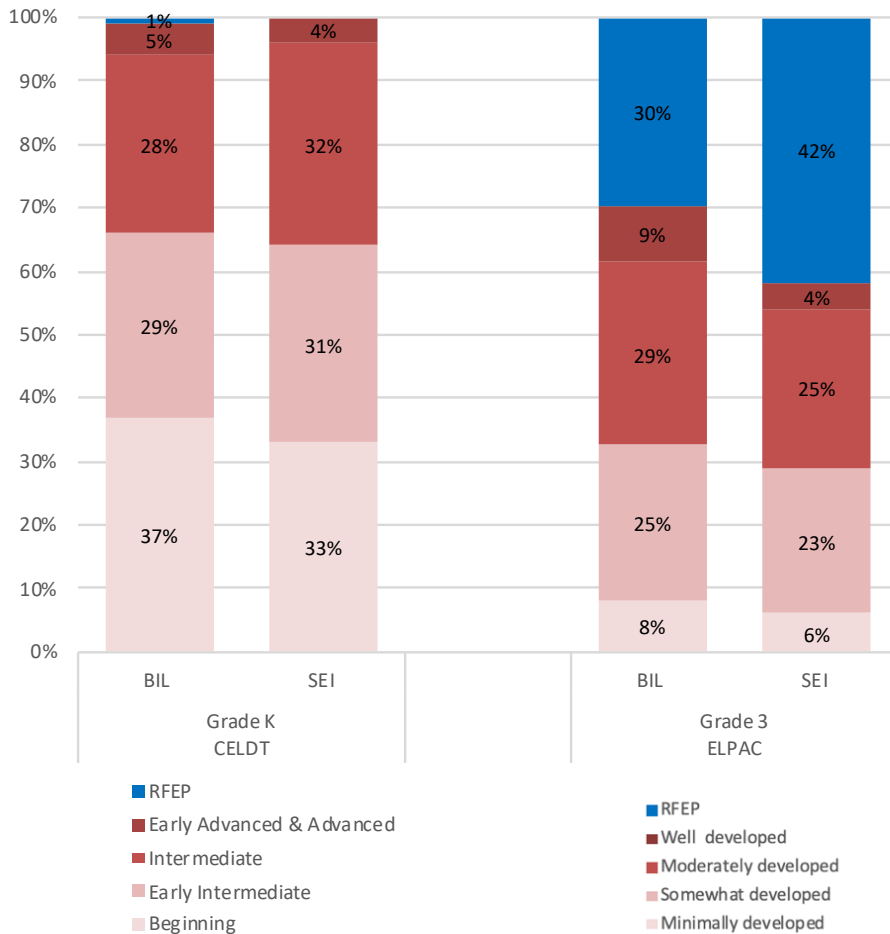
**Group B: ELD Growth from 2016-2019**

The English language development outcomes for Group B students in BIL and SEI were summarized by performance level. The analysis compared group outcomes in Kindergarten on the CELDT, and their outcomes in grade 3 on the ELPAC. Figure 5 presents a summary of the student data.

At grade K, 36% of SEI and 34% of BIL students were in the top three proficiency levels (*moderately developed, well developed and RFEP*). By grade 3, 71% of SEI were in the top three levels compared to 68% of BIL, with just 7% more SEI students at the *well developed* and *RFEP* levels than the BIL. Additionally, BIL and SEI made approximately the same progress at the two lowest ELPAC levels.

In the analysis of the BIL student group, of the 84 (37%) at *beginning* on CELDT in grade K, by grade 3 on the ELPAC, 10 were RFEP, four scored *well developed*, 20 scored *moderately developed*, 36 scored *somewhat developed*, and 14 remained at the lowest level, *minimally developed*. For the SEI group, of the 208 (33%) at *beginning* on CELDT in grade K, by grade 3 on the ELPAC, 51 were RFEP, 57 scored *well developed* or *moderately developed*, 72 scored *somewhat developed*, and 28 remained at the lowest level, *minimally developed*.

**Figure 5**  
*2016-2019 CELDT-ELPAC Overall English Language Development Growth by Program Group B Ever-ELs with Matched Scores (BIL, n = 228; SEI, n = 640)*



The descriptive statistics for the grade K (2015-16) CELDT Overall assessment for Group B EL students in BIL ( $n = 228$ ) and SEI ( $n = 640$ ) are shown in Table 6. The group means on the CELDT exam were compared using an Independent Samples  $t$ -Test. The results showed that the SEI group performed significantly higher than the BIL group ( $p < .01$ ). The effect size<sup>6</sup> of .20 indicates a small difference between the means, with the SEI group mean falling .20 standard deviations above the BIL group mean.

**Table 6**

*Descriptive Statistics for Performance on Grade K/2015-16 CELDT Overall - Group B ELs*

Group	n	Mean	SD	$t$	df	$g$	$p$
BIL	228	349	83.70	2.59	866	.20	< .01
SEI	640	364	67.14				

Note. For Hedge's  $g$ :  $g = .2$  is a small effect size,  $g = .5$  is a moderate effect size, and  $g = .8$  is a large effect size.

In summary, for Group B, at Kindergarten the SEI EL group performed significantly higher than the BIL EL group. By grade 3, some of those ELs had been reclassified to RFEP: 30% of BIL and 42% of SEI. From grade K to grade 3, BIL progressed at a rate similar to SEI. Full results of this analysis can be found in Section 4 – Appendix N.

A grade 3 (final year of study) assessment comparison could not be made for the entire group of ELs represented in Table 6 since some students in both the BIL and SEI groups were reclassified as RFEP, and therefore had no ELPAC score in grade 3.

**Group C: ELD Growth from 2017-2019**

The English language development outcomes for Group C students in BIL and SEI were summarized by performance level and are shown in Figure 6 on the next page. The analysis compared group outcomes in Kindergarten on the CELDT, and their outcomes in grade 2 on the ELPAC. By grade 2, SEI student outcomes, based on performance levels, were higher than BIL, with SEI making greater progress than BIL. Both groups reclassified close to the same percentage of students.

For the BIL group, of the 30 (28%) at *beginning* on CELDT in grade K, by grade 2 on the ELPAC, one was *RFEP*, one scored *well developed*, 12 scored *moderately developed*, 11 scored *somewhat developed*, and five remained at *minimally developed*. In comparison, of the 289 (29%) SEI students at *beginning* level on CELDT in grade K, by grade 2 on the ELPAC, 14 were *RFEP*, 28 scored *well developed*, 119 scored *moderately developed*, 72 scored *somewhat developed*, and 28 remained at *minimally developed*.

<sup>6</sup> While an analysis of significance tells if there is a difference between two means, the analysis of effect size tells how strong a relationship there is between two or more sets of data. Hedge's  $g$  is an appropriate effect size for the comparison between two means. A  $g$  of 1 indicates the two groups differ by 1 standard deviation, a  $g$  of 2 indicate they differ by 2 standard deviations and so on.  $g = .2$  is considered a small effect size,  $.5$  is considered a moderate effect size and  $.8$  a large effect size. If two groups' means do not differ by  $.2$  standard deviations or more, the difference is trivial, even if it is statistically significant.

**Figure 6**

*2017-2019 CELDT-ELPAC Overall English Language Development Growth by Program Group C Ever-ELs with Matched Scores (BIL, n = 106; SEI, n = 980)*

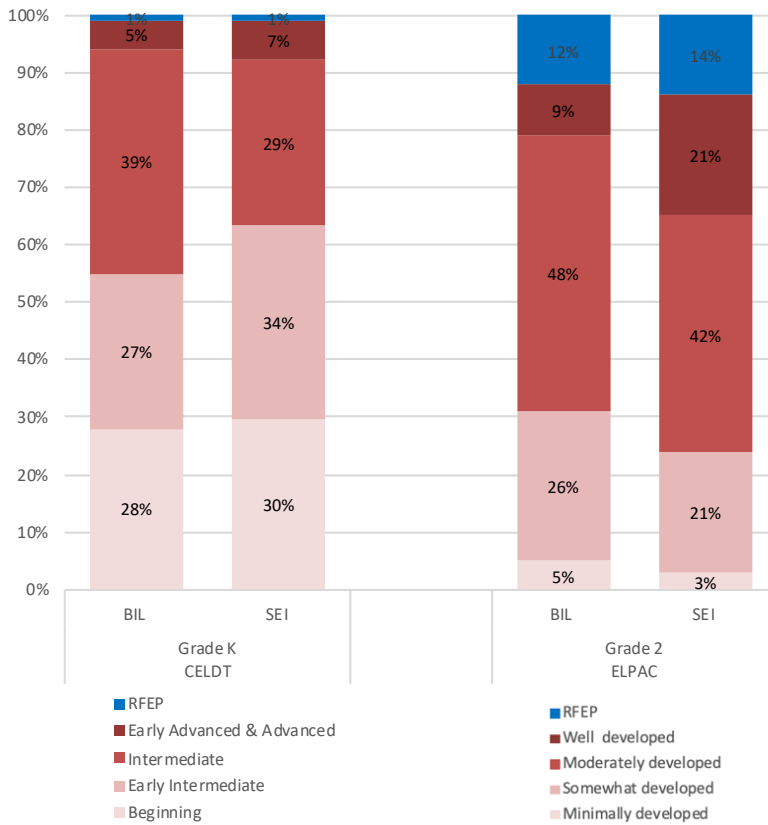


Table 7 displays the descriptive statistics for the grade K (2016-17) CELDT Overall assessment for Group C EL students in BIL ( $n = 106$ ) and SEI ( $n = 908$ ). An Independent Samples  $t$ -Test was used to compare the group means. Results showed that there was not a significant difference between the SEI and BIL group means ( $p > .05$ ). The BIL group performed higher than the SEI group, but not significantly higher (effect size,  $g = .06$  indicates a trivial difference between the means).

**Table 7**

*Descriptive Statistics for Performance on Grade K /2016-17 CELDT Overall - Group C ELs*

Group	n	Mean	SD	t	df	g	p
BIL	106	371	66.60	-0.61	1084	.06	> .05
SEI	980	367	68.73				

Note. For Hedge's  $g$ :  $g = .2$  is a small effect size,  $g = .5$  is a moderate effect size, and  $g = .8$  is a large effect size.

Overall, for Group C, at Kindergarten there was no significant difference between the SEI and BIL groups. By grade 2, some ELs were RFEF: 12% of BIL and 14% of SEI. By grade 2 SEI progressed at a greater rate than BIL. SEI had a larger group of students at the *well developed* level (21%) compared to BIL (9%). Full results of this analysis can be found in Section 4 – Appendix N.

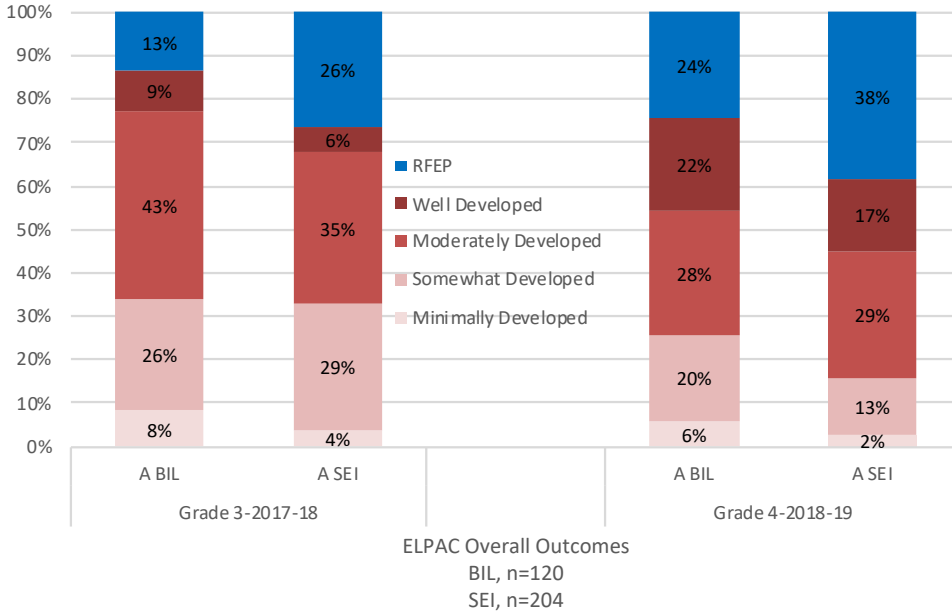
A grade 2 (final year of study) assessment comparison could not be made for the entire group of ELs represented in Table 7 since some students in both the BIL and SEI groups were reclassified as RFEF, and therefore had no ELPAC score in grade 2.

**Group A: 2018 and 2019 ELPAC Student Outcomes**

The grade 3 to grade 4 outcomes on ELPAC for BIL and SEI in Group A are displayed in Figure 7. Both groups showed a similar increase in students that were *RFEP* or scored *well developed* on ELPAC; BIL from 22% to 46% (24% increase) and SEI from 32% to 55% (23% increase). Both groups also decreased the percentage

**Figure 7**  
2018 and 2019 ELPAC Overall Outcomes by Program, Group A Ever-ELs with Matched Scores

of students scoring at the lowest levels of ELPAC, with BIL students showing an 8% decrease (34% to 26%) and SEI students with an 18% decrease (33% to 15%).



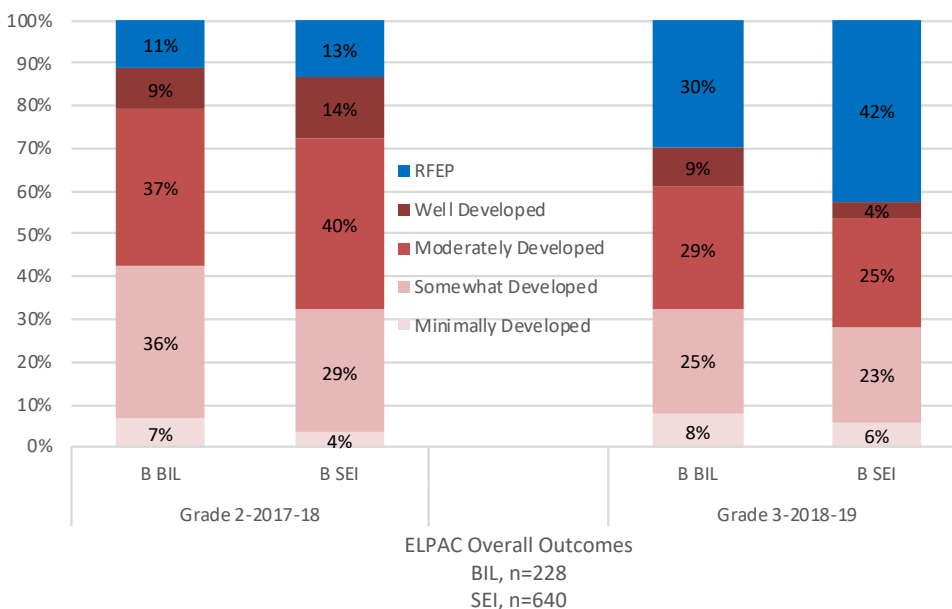
Note. ELPAC 2018 recoded with 2019 ELPAC threshold ranges.

**Group B: 2018 and 2019 ELPAC Student Outcomes**

Figure 8 displays grade 2 to grade 3 outcomes on ELPAC for BIL and SEI in Group B. Both groups showed an increase of 19% in students that were *RFEP* or scored *well developed* on ELPAC (BIL from 20% to 39%; SEI from 27 to 46%), with the SEI group showing a larger percentage (42%) of students moving to *RFEP* than the BIL group (30%). The BIL group made a 10% decrease in students scoring *somewhat* and *minimally developed* compared to the SEI group (4% decrease).

**Figure 8**  
2018 and 2019 ELPAC Overall Outcomes by Program, Group B Ever-ELs with Matched Scores

The BIL group made a 10% decrease in students scoring *somewhat* and *minimally developed* compared to the SEI group (4% decrease).

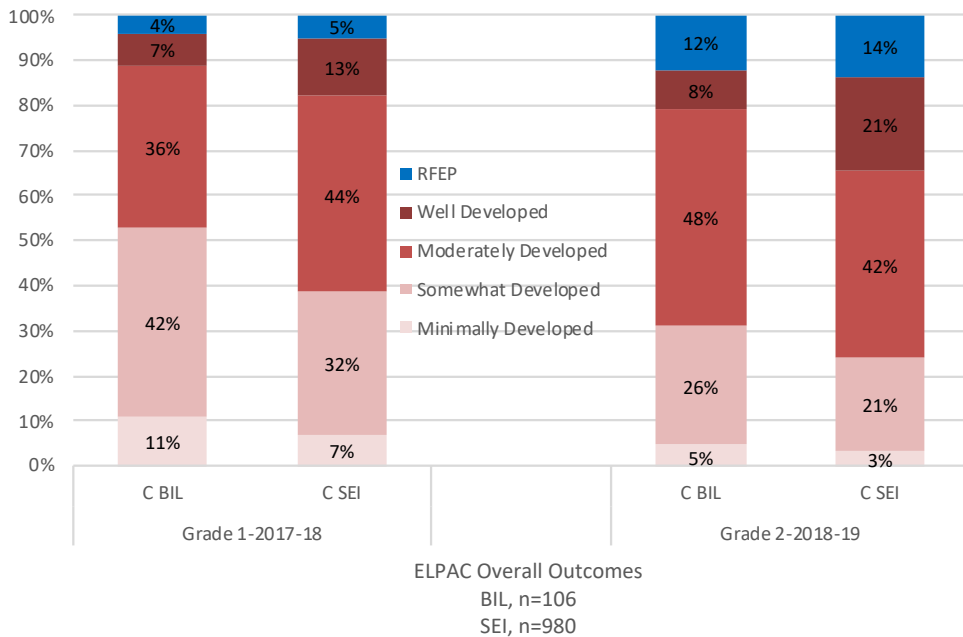


Note. ELPAC 2018 recoded with 2019 ELPAC threshold ranges.

### Group C: 2018 and 2019 ELPAC Student Outcomes

The grade 1 to grade 2 outcomes on ELPAC for BIL and SEI students in Group B are exhibited in Figure 9. Although, the BIL group began with a large percentage of students at the two lowest ELPAC levels (53%), by grade 2, 12% were *RFEP* and 56% had scored at *well developed* or *moderately developed* on ELPAC. The SEI group performed slightly better; by grade 2, 14% were *RFEP* and 63% scored at *well developed* or *moderately developed* on ELPAC.

**Figure 9**  
2018 & 2019 ELPAC Overall Outcomes by Program, Group C Ever-ELs with Matched Scores



Note. ELPAC 2018 recoded with 2019 ELPAC threshold ranges.

### Part Three: SBAC Student Outcomes

SBAC ELA and mathematics results were analyzed for Group A (grade 3 and grade 4 data) and Group B (grade 3 data). Group C did not have SBAC results since these students are second graders in the 2018-2019 and SBAC testing starts in grade 3.

#### Group A SBAC Outcomes

Group A is comprised of 253 Ever-ELs. Figure 10 displays the SBAC ELA outcomes for Ever-EL Students in SEI and BIL classrooms. Compared to SEI, BIL had a larger increase in students at the two highest levels, *exceeded* and *met*, combined. Although there was little difference between the SEI and BIL groups on the SBAC in grade 3, by grade 4, BIL had a larger percentage of students at the *met* and *exceeded* levels (39% compared to SEI 36%) and a smaller percentage of students at the beginning level (36% than the SEI group (41%).

**Figure 10**

*SBAC English Language Arts Outcomes by Program, Group A Ever-ELs with Matched Scores*

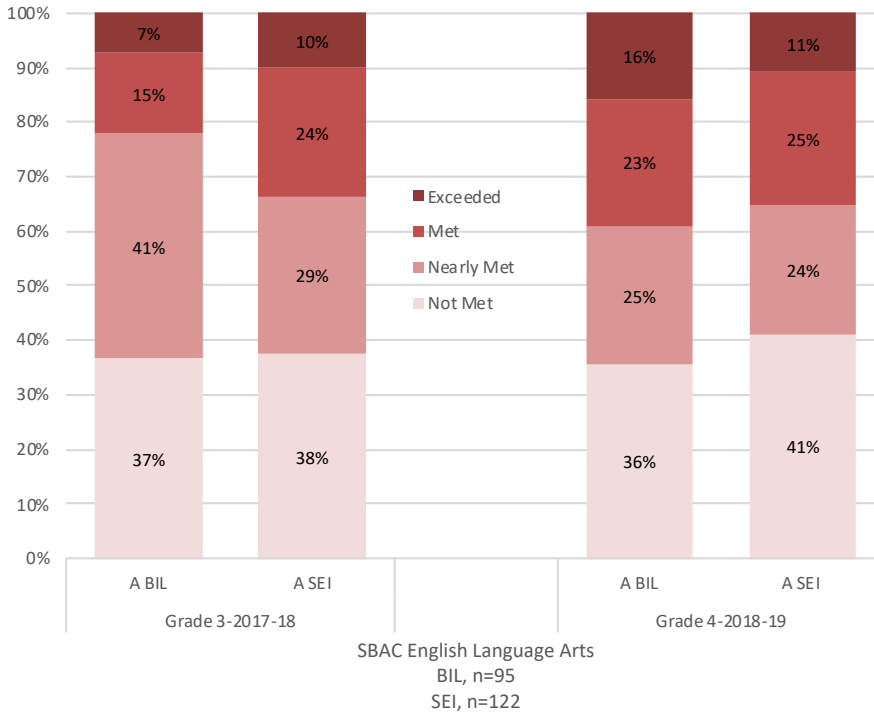


Table 11 presents descriptive statistics for the pre- and post- performance for matched students in Group A on the SBAC ELA assessment for the BIL student group ( $n = 95$ ) and the SEI student group ( $n = 122$ ). A Matched Pairs  $t$ -Test was conducted to determine the overall performance from pre (grade 3, 2017-18) to post (grade 4, 2018-19) on the SBAC ELA for students in each group, BIL and SEI. Following is a summary of the analyses.

On pre to post comparisons of the SBAC ELA, there was a significant difference in performance for the BIL group ( $p < .001$ ), and an effect size of 1.13 which indicates a large difference between the pre and post means of the BIL group. There was also a significant difference in performance for the SEI group ( $p < .001$ ), and an effect size<sup>7</sup> of .67 which indicated a moderate difference between the pre and post means of the SEI group, indicating the BIL group made greater gains than the SEI group.

**Table 11**

*Descriptive Statistics for Pre-Post Overall Performance on SBAC English Language Arts Group A with Matched Scores*

Group	$n$	Pre		Post		$t$	df	$d$	$p$
		Grade 3/2017-18		Grade 4/2018-19					
		M	SD	M	SD				
BIL	95	2380.97	7.62	2441.18	8.98	11.06	94	1.13	< .001
SEI	122	2392.38	7.38	2432.81	7.26	7.45	121	.67	< .001

Note. A Matched Pairs  $t$ -test was conducted for the SEI and BIL groups. The analysis includes pre and post mean raw scores for matched students on SBAC English language arts. Effect size measured by Cohen's  $d$ , where  $d = .2$  is a small effect size,  $d = .5$  is a moderate effect size and  $d = .8$  is a large effect size.

<sup>7</sup>Cohen's  $d$  is an appropriate effect size for the comparison between two means. A  $d$  of 1 indicates the two groups differ by 1 standard deviation, a  $d$  of 2 indicates they differ by 2 standard deviations and so on.  $d = .2$  is a small effect size,  $.5$  is a moderate effect size and  $.8$  is a large effect size. If two groups' means do not differ by  $.2$  standard deviations or more, the difference is trivial, even if it is statistically significant.



The SEI and BIL overall performance on the pre-assessment (Grade 3, 2017-18 SBAC ELA) and post-overall performance (Grade 4, 2018-19 SBAC ELA) were compared. Following is a summary of the analyses.

For the pre-overall performance (SBAC 2017-18), the group means on the pre-assessment were compared using an Independent Samples *t*-Test. The results showed that on the 2017-18 SBAC ELA, there was not a significant difference between the BIL and SEI group means,  $p > .05$ . The SEI group performed higher than the BIL group but not significantly higher, and with a trivial effect size.

For the post-overall performance (SBAC 2018-19), the Johnson Neyman Procedure (JN) was used as a follow-up to One-Way ANCOVA and ANCOVA (which were used as the first analyses to account for differences in the pre-assessment). On the grade 3 SBAC assessment, there was no significant difference between the SEI and BIL groups, although the SEI group performed slightly higher than the BIL. On the grade 4 SBAC assessment, accounting for differences in the pre-assessment, there was no significant difference between the two groups, however the BIL group scored higher than the SEI. Full results of this analysis can be found in Section 4 – Appendix N.

The Group A SBAC mathematics grade 3 and grade 4 outcomes for BIL and SEI students are displayed in Figure 11. As shown, BIL outperformed SEI in both grade 3 and grade 4. By grade 4, BIL had a larger percentage of students at the *exceeded* and *met* levels (37% compared to SEI 34%), and a smaller percentage of students (31% compared to SEI 34%) at the *not met* level.

**Figure 11**  
*SBAC Mathematics Outcomes by Program, Group A Ever-ELs with Matched Scores*

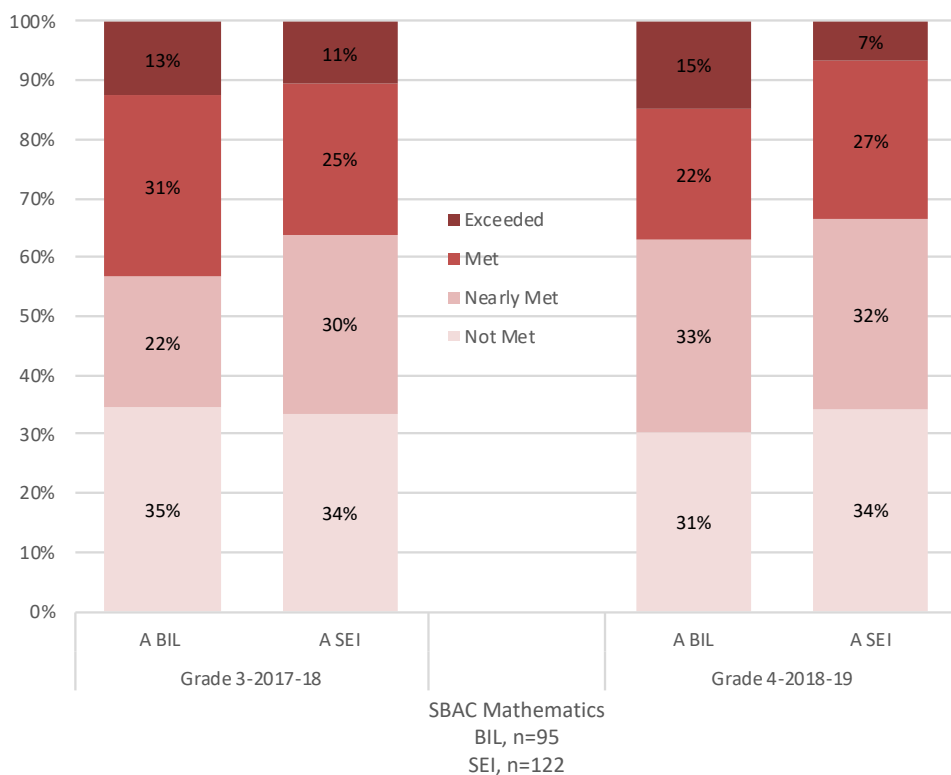


Table 12 presents descriptive statistics for the pre- and post- performance for matched students on the SBAC mathematics exam for the SEI group ( $n = 122$ ) and separately for the BIL group ( $n = 95$ ). To determine the overall performance from pre to post of each group on the SBAC mathematics assessment for students in BIL and SEI, a Matched Pairs  $t$ -Test was conducted. On pre to post comparisons of the SBAC mathematics for each group, there was a significant difference in performance for the BIL group ( $p < .001$ ), and an effect size of .99 which indicates a large difference between the means. There was also a significant difference in performance for the SEI group ( $p < .001$ ), and an effect size of .83 which indicated a large difference between the means.

**Table 12**  
*Descriptive Statistics for Pre-Post Overall Performance on SBAC Mathematics Group A with Matched Scores*

Group	$n$	Pre		Post		$t$	df	$d$	$p$
		Grade 3/2017-18		Grade 4/2018-19					
		M	SD	M	SD				
BIL	95	2411.80	7.21	2455.02	8.57	9.65	94	.99	< .001
SEI	122	2411.65	6.25	2447.49	6.52	9.20	121	.83	< .001

*Note.* A Matched Pairs  $t$ -test was conducted for the SEI and BIL groups. The analysis includes pre and post mean raw scores for matched students on SBAC mathematics. Effect size measured by Cohen’s  $d$ , where  $d = .2$  is a small effect size,  $d = .5$  is a moderate effect size and  $d = .8$  is a large effect size.

SEI and BIL differences on pre-overall performance (Grade 3, 2017-18 SBAC ELA) and post-overall performance (Grade 4, 2018-19 SBAC ELA) were also examined. Following is a summary of the analyses.

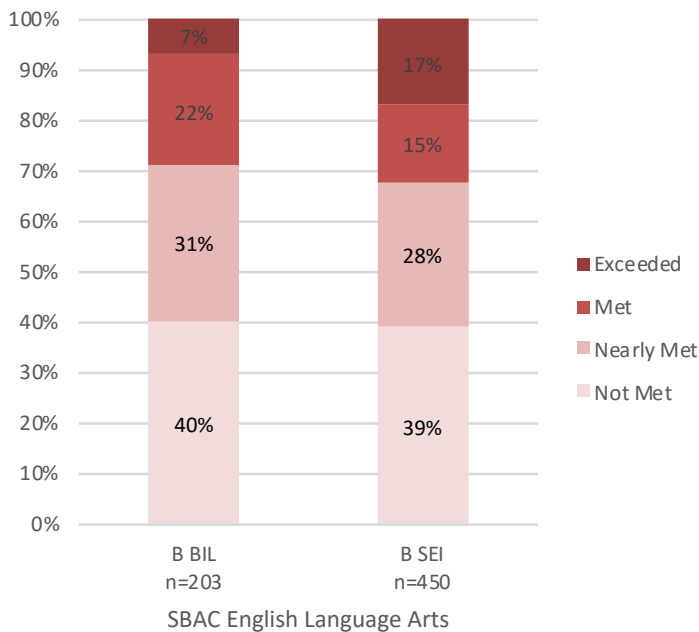
For the pre-overall performance (SBAC 2017-18), the group means on the pre-assessment were compared using an Independent Samples  $t$ -Test. The results showed that on the grade 3 mathematics assessment, there was not a significant difference between the BIL and SEI group means, ( $t(215) = -0.02, p > .05, g = .002$ ). The BIL group performed higher than the SEI group, but not significantly higher and the effect size of .002 indicates a trivial difference between the means.

For the post-overall performance (SBAC 2018-19), A comparison of post overall performance on the SBAC mathematics, across the two groups, was completed using a one-way ANCOVA test. ANCOVA was used to account for initial differences in the groups, with the 2017-18 SBAC mathematics pre-assessment scores entered as the covariate. Results of the ANCOVA, conducted to compare group mean performance on the 2018-19 SBAC mathematics assessment, showed that the main effect of group was not significant,  $F(1, 214) = 1.57, p > .05, \eta_p^2 = .01$ . Partial eta squared of .01 shows that the main effect of group had a trivial effect on post-assessment scores, explaining .01 or 1% of the variance in the dependent variable. The covariate of pretest was significant,  $F(1, 214) = 477.50, p < .001, \eta_p^2 = .69$  indicating that pre-assessment scores had a significant effect on post-assessment scores (higher pre-assessment scores were associated with higher post-assessment scores). The adjusted means showed that the BIL group performed higher on the 2018-19 mathematics assessment, but not significantly higher, with adjusted means of 2454.94 and 2447.55, respectively. Full results of this analysis can be found in Section 4 – Appendix N.

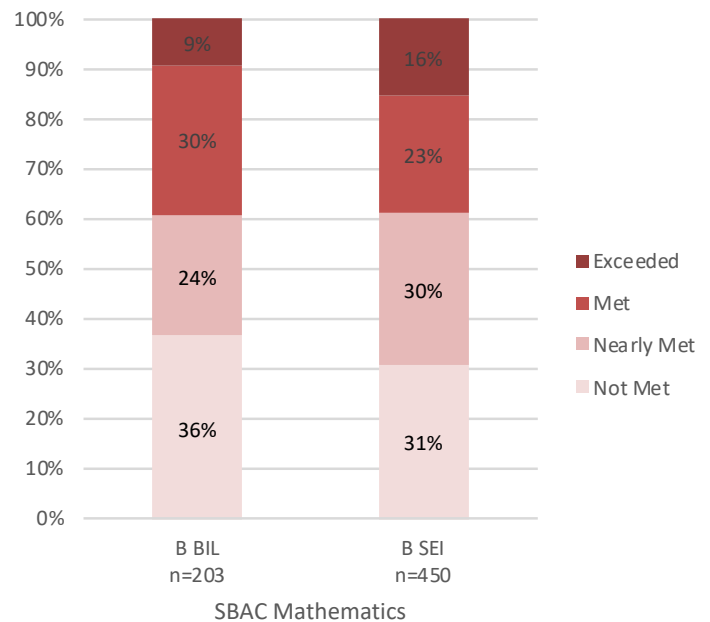
## Group B SBAC Outcomes

Group B includes 814 Ever-ELs and 574 IFEP and EO students. Their grade 3 SBAC scores are reported by language classification to determine grade 3 progress. The grade 3 SBAC ELA assessment for students in Group B displayed in Figure 12, show that student ELA outcomes were similar for both groups, with the exception of SEI with a larger percentage of students at the highest level, *exceeded*. Figure 13 presents the Group B SBAC mathematics outcomes for BIL and SEI in grade 3. Although both groups performed similarly on SBAC mathematics, the SEI group had a larger percentage of students at the *exceeded* level (16% for SEI compared to 9% for BIL) and the BIL group had a larger percentage at the *not met* level (36% for BIL compared to 31% for SEI).

**Figure 12**  
*SBAC English Language Arts Outcomes by Program*  
*Group B Ever-ELs with Matched Scores*



**Figure 13**  
*SBAC Mathematics Outcomes by Program*  
*Group B Ever-ELs with Matched Scores*



## Part Four: Summary of Findings and Implications

In large-scale implementation efforts such as replication of the SEAL Model, there are many factors that can affect systemic implementation at schools and districts, such as the limitations of this study, including:

- ***Implementation timeframe and model refinement.*** Districts and schools in the study were part of cohorts that began implementation during different time frames 2013-14 to 2016-17, and while the model underwent continued refinement.
- ***Changes in primary language programs.*** Some districts and schools were refining or expanding their bilingual/dual language programs at the same time as this evaluation project was being conducted.
- ***Professional learning data.*** Because consistency and accuracy of collection of this data increased over the four years of the study, evaluators relied on project leads or self-reported attendance records to verify minimum professional learning completion targets.

- Level of implementation. Evaluators did not have representative data assessing the classroom implementation, and had only anonymous self-reported data from principals on implementation levels at their schools.
- Change in State English Language Proficiency Assessment. The change from the CELDT to the ELPAC during this study, did not allow for some types of pre-post analyses. Additionally, the first administration of the ELPAC may not have been conducted consistently across school sites because of differences in training and experience of the assessors.

### Summary of Findings: English Language Development

In order to analyze the progress of ELs in English language development, CELDT data was used as the pre-assessment in grade K, and ELPAC data was used for post-assessment in 2018-19 for Group A (grade 4), Group B (grade 3) and Group C (grade 2). All data are for students enrolled in SEAL schools from Kindergarten through 2018-19 with CELDT or ELPAC scores for each year of the study. Following is a summary of findings.

For Group A, at Kindergarten, the SEI group scored significantly higher than the BIL group. By grade 4, some of those ELs were reclassified to RFEP (24% of BIL and 38% of SEI). From grade K to grade 4, BIL progressed at a greater rate than did SEI, with BIL coming much closer to the SEI outcomes in grade 4 than they were in Kindergarten, even though SEI performed significantly higher than BIL at Kindergarten.

For Group B, at grade K the SEI EL group scored significantly higher than the BIL EL group. By grade 3, some of those ELs had been reclassified to RFEP (30% of BIL and 42% of SEI). From grade K to grade 3, the BIL group progressed at a rate similar to the SEI group.

For Group C, at grade K there was no significant difference between the SEI and BIL groups. By grade 2, SEI students progressed at a greater rate than BIL; SEI had a larger percentage of students at the *well developed* level (21%) compared to BIL (9%). There were also ELs reclassified to RFEP (12% of BIL and 14% of SEI).

Overall, for Groups A and B, the BIL group began at significantly lower proficiency levels in grade K than the SEI group. Even so, grade 4 Group A BIL progressed at a greater rate than did SEI, and progressed at a similar rate as the SEI group in grade 3. The results for Group C are different, with the SEI group progressing at a greater rate than BIL in grade 2 despite starting at a similar level in Kindergarten.

### Summary of Findings: Academic Outcomes

From grade 3 to grade 4, Group A scores on SBAC ELA and SBAC mathematics were analyzed to determine differences between SEI and BIL student groups. The findings for Group A are summarized below.

#### *SBAC English language arts*

- By grade 4, the BIL group had a larger percentage of students at the *met* and *exceeded* levels (39% compared to SEI at 36%) and a smaller percentage of students (36%) at the *beginning* level than the SEI (41%).
- In examining the growth of each groups, BIL and SEI separately, each group made significant progress from grade 3 to grade 4, with a large effect size for BIL and a moderate effect size for SEI.
- In comparing the mean scale scores of the groups in grade 3, the SEI group performed slightly higher than the BIL, but not significantly. By grade 4 (accounting for differences on the pre-assessment), although the BIL group scored higher than the SEI group, there was no significant difference between the groups.

### SBAC mathematics

- By grade 4, BIL had a larger percentage of students at the *met* and *exceeded* levels (37% compared to SEI at 34%), and a smaller percentage of students (31% compared to SEI at 34%) at the *not met* level.
- In examining the growth of each group separately from grades 3 to 4, both BIL and SEI made significant progress, with a large effect size for both groups.
- In comparing the mean scale scores of the groups in grade 3, the BIL group performed slightly higher than the SEI group, but not significantly. By grade 4, accounting for differences on the pre-assessment, there was no significant differences between the groups, but the BIL group scored higher than the SEI.

### Implications

Because findings from the study show BIL students making similar or greater progress than SEI students in 2018-19, even as they performed significantly lower than SEI at Kindergarten, districts have this and other research evidence to support moving ahead with bilingual programs for ELs.

This Brief is based on the 4-Year External Research and Evaluation Study by the Center for Equity for English Learners at Loyola Marymount University with Wexford Institute conducted for the Sobrato Family Foundation.



**Brief 10 Recommended Citation:** Cassidy, S., Saldivar, R, & Ross, A. (2020). Comparison of English language development and academic outcomes of SEAL students in bilingual versus structured English immersion programs. In Center for Equity for English Learners, Loyola Marymount University & Wexford Institute, *Sobrato Early Academic Language (SEAL) Model: Final report of findings from a four-year study (Section 4, Brief 10)*. doi: <https://doi.org/10.15365/ceel.seal2020>