education northwest

OREGON STATE UNIVERSITY | TEACHERS EDUCATING ALL MULTILINGUAL STUDENTS

INTEGRATING LANGUAGE ACQUISITION AND IMPROVING OUTCOMES FOR ENGLISH LEARNER STUDENTS

Jason Greenberg Motamedi and Manuel Vazquez Cano

October 2022

Oregon State University

ABOUT EDUCATION NORTHWEST

Founded as a nonprofit corporation in 1966, Education Northwest builds capacity in schools, families, and communities through applied research and development. We collaborate with public, private, and community-based organizations to address educational inequities and improve students' success. Although much of our work focuses on the Pacific Northwest, our evaluations, technical assistance, and research studies have national impact and provide timely and actionable results.

Education Northwest is supporting Oregon State University by conducting a formative evaluation to support the implementation and continuous improvement of TEAMS, as well as a rigorous evaluation of the program's impact on student achievement.

CONTACT

Education Northwest
1417 NW Everett St, Suite 310
Portland, OR 97209

educationnorthwest.org
503.275.9500

AUTHORS

Jason Greenberg Motamedi
Manuel Vazquez Cano

SUGGESTED CITATION

Greenberg Motamedi, J., & Vazquez Cano, M. (2022) *Oregon State University Teachers Educating All Multilingual Students: Integrating language acquisition and improving outcomes for English learner students.* Education Northwest.

CONTENTS

TABLES

FIGURES

EXECUTIVE SUMMARY

Multilingual students, including English learners, bring cultural, linguistic, and individual strengths, assets, and diversity to Oregon's classrooms and communities. Eighteen percent of all students in Oregon have been classified as English learners at some point in their schooling, yet a minority of teachers in the state have been specifically prepared to support this distinct group of students.

Teachers Educating All Multilingual Students (TEAMS) is a teacher professional development program at Oregon State University (OSU) that culminates in an English for speakers of other languages (ESOL) endorsement and/or a dual language specialization. The program increases Oregon teachers' knowledge and skills for effectively teaching English learner students. To achieve this goal, the program focuses on building in-service teachers' ability to integrate language acquisition into content area courses and to deepen family and community engagement. In-service teachers who participate in the hybrid program complete online coursework and attend in-person meetings.

From 2016 to 2022, 124 in-service teachers in four cohorts participated in TEAMS. As of October 2022, 71 participants had earned an ESOL endorsement, 33 had earned a dual language specialization, and four participants earned both endorsement and specialization in five Oregon districts: Albany, Beaverton, Bend, Corvallis, and Springfield. TEAMS is partially funded through an Office of English Language Acquisition National Professional Development grant from the U.S. Department of Education, and participants receive scholarships to cover tuition.

This study explores whether TEAMS professional development had an impact on the academic outcomes of English learner students whose teachers participated in TEAMS. Using student-level administrative data from the Oregon Department of Education, Education Northwest compared the assessment outcomes of the English learner students of TEAMS teachers to the outcomes of similar comparison students whose teachers did not participate in TEAMS. Specifically, we compared assessment outcomes from the 2018/19 Oregon Smarter Balanced English language arts and ELPA21 English language proficiency assessments. Due to complications related to the COVID-19 pandemic, reliable assessment data were only available for the academic year 2018/19, which includes the students taught by the first TEAMS cohort.

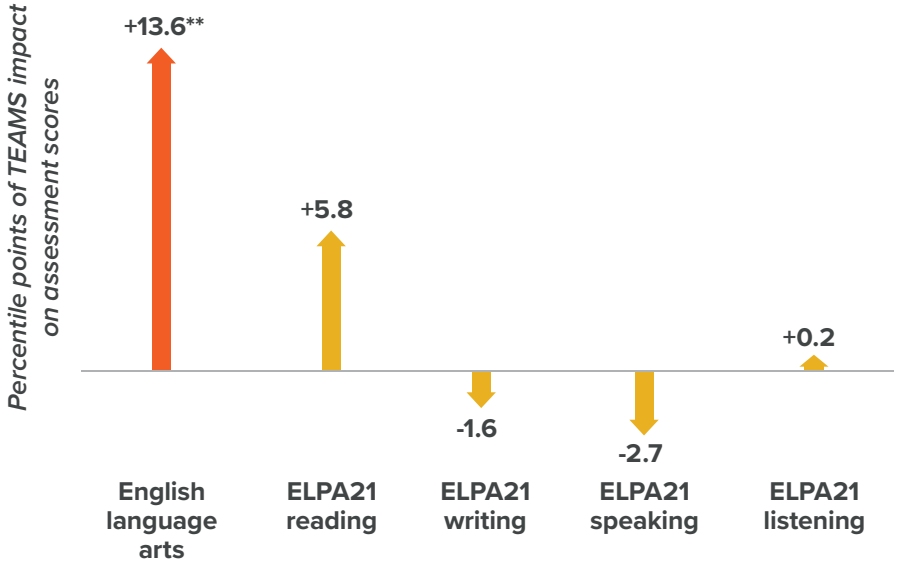
Compared to other teachers in Oregon, TEAMS teachers were more racially diverse and less experienced, and they taught a higher percentage of students who were English learners and eligible for the National School Lunch Program. To address the potential for selection bias in this study, we used a two-step

matching procedure to identify a group of comparison teachers in TEAMS school districts who appeared likely to enroll in TEAMS. We then selected a subset of their students who had statistically indistinguishable demographic characteristics, program enrollment, and academic achievement from TEAMS students.

Cohort 1 teachers' participation in TEAMS positively impacted English learner students' English language arts assessment outcomes. English language arts testing scores of English learner students taught by TEAMS teachers were 0.348 standard deviations higher than those of comparison students taught by comparison teachers. This difference is statistically significant and of moderate size, representing a 13.6 percentile point increase for an average English learner student, the equivalent of moving their English language arts scores from the 50th to the 64th percentile (figure E1).

Teachers' participation in TEAMS had no impact on students' English language proficiency outcomes. The English language proficiency testing scores of English learner students taught by TEAMS teachers were very similar to those of their matched peers and were negligible in terms of statistical significance and magnitude.

Figure E1. TEAMS had a positive impact on English learner students' English language arts performance



** $p \leq .01$

ELPA21 is Oregon's English language proficiency assessment.

Source: Education Northwest analysis of 2017/18 and 2018/19 Oregon Department of Education data.

INTRODUCTION

Nearly one in every five students in Oregon has been classified as an English learner at some point in their schooling (Oregon Department of Education, 2021). These English learner students bring vital cultural, linguistic, and individual strengths, assets, and diversity to Oregon's classrooms and communities.

Every school has a federal obligation to provide all English learner students with access to rigorous grade-level content and quality English language instruction (U.S. Department of Justice & U.S. Department of Civil Rights, 2015). However, very few teachers in Oregon have been prepared to support English learner students. In 2021, 16 percent of all Oregon teachers held an English for speakers of other languages (ESOL) endorsement. Most of these endorsement-holders were English language development teachers. This means that very few content area teachers—such as those who teach English language arts, math, science, and social studies—have the knowledge and preparation to meet the needs of English learner students (Thompson, 2021).

Who is an English learner?

Throughout this report, we use two terms to describe students' English learner status:

English learner students: All students who qualify for English language development support in a given school year, including recent arrivals as well as long-term English learner students. English learner students are eligible for a variety of services and supports, including English language development, although their families may waive these services.

Non-English learner students: All students who are not classified as English learners in a school year. This includes former English learner students who exited the program and were reclassified as "English proficient;" students being monitored for their first few years after reclassification; and students who were never classified as English learners, including monolingual and multilingual English speakers.

Teachers Educating All Multilingual Students (TEAMS) is a teacher professional development program at Oregon State University (OSU). The program aims to increase Oregon teachers' knowledge and skills for effectively teaching English learner students by integrating language acquisition into content area courses as well as deepening family and community engagement. In-service teachers who participate in the hybrid program complete online coursework and attend in-person meetings to ultimately earn an ESOL endorsement and/or a dual language specialization.

This evaluation examines the outcomes of students taught by Cohort 1 TEAMS teachers who passed five online courses, completed an internship in their current classroom, participated in face-to-face meetings in district groups, and passed the Oregon Educator Licensure Assessment (ORELA) to earn their ESOL endorsement. Appendix C describes the TEAMS ESOL professional development program.

TEAMS is partially funded through an Office of English Language Acquisition National Professional Development grant from the U.S. Department of Education. From 2016 to 2022, 124 in-service teachers in four cohorts received scholarships to pay for tuition and participated in TEAMS. As of October 2022, 71 participants had earned an ESOL endorsement, 33 had earned a dual language specialization, and four participants earned both endorsement and specialization in five Oregon districts: Albany, Beaverton, Bend, Corvallis, and Springfield (table 1).

Table 1. Most TEAMS participants completed the program and earned an ESOL endorsement or DL specialization

	Dates of enrollment	Enrolled in TEAMS	ESOL endorsed	DL specialized	Both ESOL and DL
Cohort 1	6/2017–12/2019	39	37	–	–
Cohort 2	6/2019–12/2020	44	34	3	4
Cohort 3	7/2020–9/2021	26	–	22	–
Cohort 4	9/2020–6/2022	15	–	8	–

DL is dual language. ESOL is English for speakers of other languages.

Note: Results are from October 2022 and may not reflect the current outcomes. Results also only show outcomes for participants funded by the Office of English Language Acquisition. Two district-funded participants are excluded from this table and this study.

Source: Education Northwest analysis of Oregon State University documents (2022) and Teacher Standards and Practices Commission records (2022).

UNDERSTANDING THE IMPACT OF TEAMS ON ENGLISH LEARNER STUDENTS

Education Northwest used student-level administrative data from the Oregon Department of Education to examine the impact of participation in TEAMS on the academic outcomes of English learner students, addressing the following research question:

> **How does teacher participation in TEAMS and earning an ESOL endorsement or dual language specialization impact the performance of English learner students on state English language arts and English language proficiency assessments?**

This study found that teachers' participation in TEAMS had a statistically significant and positive impact on their students' English language arts assessment scores, which were 0.348 standard deviations higher than those of comparison students taught by comparison teachers.

A growing body of research examines how teachers' participation in TEAMS is related to multilingual family engagement before and during the COVID-19 pandemic, as well as changes in teachers' confidence in and use of English learner-focused instructional skills and strategies.

A list of publications and presentations related to TEAMS is available in appendix C.

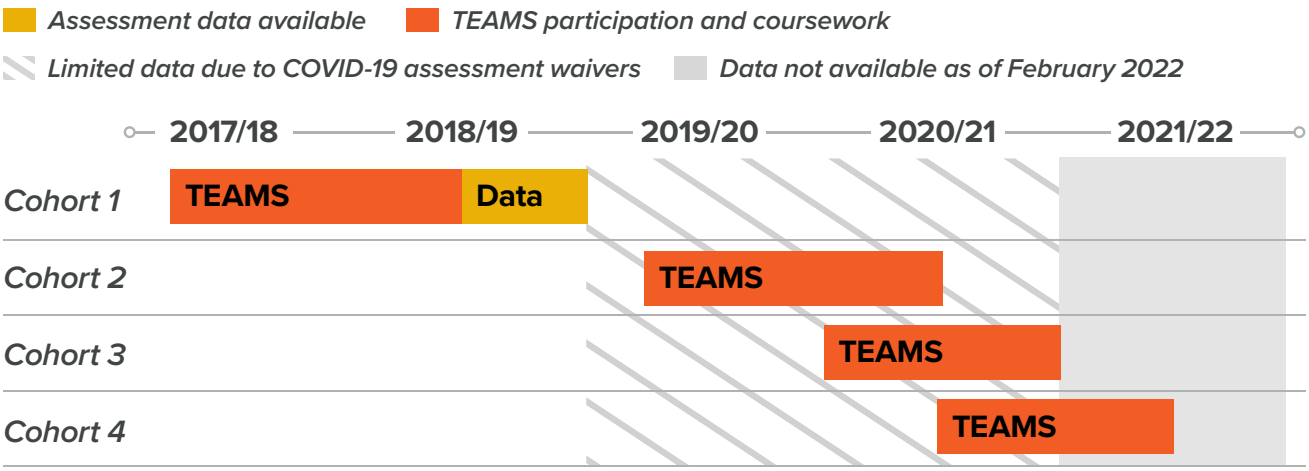
Specifically, we compared the Oregon Smarter Balanced English language arts and ELPA21 English language proficiency assessment outcomes of English learner students taught by TEAMS teachers in Cohort 1 to the outcomes of matched students taught by teachers who did not participate in TEAMS. We describe the methods used to identify a comparison group of teachers and students in detail below.

ACCOUNTING FOR THE COVID-19 PANDEMIC

Oregon districts were not required to administer state assessments to students in the 2019/20 and 2020/21 school years because the U.S. Department of Education granted an assessment waiver in response to the COVID-19 pandemic (Brogan, 2020; Rosenblum, 2021). While some students were tested in some districts, the administration of assessments may have been selective and purposeful; for example, districts may have only tested students who were most likely to be reclassified as former English learners. Therefore, test results from 2019/20 and 2020/21 may not be generalizable to other students.

Because of these limitations, reliable assessment data for this impact study are limited to the 2018/19 school year (figure 1). This means that we can estimate the impact of TEAMS on the outcomes of students taught in 2018/19, the year that Cohort 1 teachers completed TEAMS (December 2018) and earned their ESOL endorsement (by June 2019). Teachers in Cohorts 2–4, including those who earned a dual language specialization, are excluded from this study.

Figure 1. Reliable assessment data were available only in the 2018/19 school year



Source: Education Northwest analysis of Oregon State University documents (2022).

IDENTIFYING TEAMS TEACHERS, STUDENTS, AND PEERS

To understand the impact of TEAMS on English learner student outcomes, we compared the English language arts and English language proficiency assessment outcomes of students taught by TEAMS teachers to the outcomes of similar students taught by similar teachers who did not participate in TEAMS or receive an ESOL endorsement. Student test scores from 2017/18 (the year before students were taught by a TEAMS or comparison teacher) comprise the baseline data. Test scores from 2018/19 (the year students were taught by a TEAMS or comparison teacher) comprise the outcome data.

TEAMS teachers were more racially diverse and less experienced than their peers. Their students were also more diverse, with a higher percentage of English learners and students eligible for the National School Lunch Program compared to other teachers.

TEAMS students had higher English language proficiency scores and lower math and English language arts scores than their district peers.

To determine whether participation in TEAMS had an impact on student outcomes, we used statistical methods to find a comparison group of teachers and students who were very similar to TEAMS teachers and students but did not participate in the program.

As of October 2022, 37 TEAMS teachers in Cohort 1 had earned an ESOL endorsement in Oregon. Of these, 35 were identified in Oregon Department of Education data as teachers of record in Oregon public K–12 schools. Teachers of record have students directly linked to their classrooms, which allows student outcome data to be tied to specific teachers. Among the teachers of record, 18 TEAMS teachers were linked to 65 unique English learner students who had English language arts and/or English language proficiency test scores from both 2017/18 and 2018/19.

Why are only 18 teachers from Cohort 1 included in the study when 37 earned their ESOL endorsement?

- **Two TEAMS teachers were not in the Oregon Department of Education dataset in 2018/19.** Neither individual was working as a teacher; one was on leave and the other had left the profession.
- **Seven TEAMS teachers did not have students assigned to them.** Coaches, teachers on special assignment, administrators, and some English language development teachers are not teachers of record and do not have individual students directly assigned to them.
- **Four TEAMS teachers did not have English learner students,** so the students they taught did not have English language proficiency outcomes and could not be included in the main English language arts analysis.
- **Six TEAMS teachers did not have students in tested grades.** In Oregon public schools, students take the state English language arts assessment in grades 3–8 and once in high school. Teachers with assignments outside of those grades are not associated with English language arts student test scores.

COHORT 1 TEAMS TEACHERS AND THEIR STUDENTS

TEAMS teachers were more racially diverse than the state or district average: 19 percent of Cohort 1 TEAMS teachers identified as people of color, compared to 10 percent of Oregon teachers and 9 percent of their district peers (see table A1 in appendix A). TEAMS teachers tended to be earlier in their careers than other teachers in their districts, with an average of four fewer years of teaching experience. A higher percentage of TEAMS teachers (64%) taught in elementary grades (K–5) than the district average (42%).

TEAMS teachers taught a higher percentage of English learner students and students who were eligible for the National School Lunch Program: Almost 19 percent of their students were classified as current English learners, compared to 9 percent for other teachers in their district and 10 percent for other teachers in the state. The English learner students assigned to TEAMS teachers had higher English language proficiency scores than their district peers and lower math and English language arts scores in 2017/18, the year before they were taught by TEAMS teachers (see tables A2 and A3 in appendix A).

COMPARISON GROUP TEACHERS AND STUDENTS

With teacher professional development programs, it can be challenging to evaluate impact because the teachers who choose to participate are likely different from their peers. For example, teachers who opt to enroll in graduate coursework while working full time may be less likely to have familial responsibilities. They may be especially invested because they have many English learner students in their classrooms. Some teachers may be motivated because they are former English learners themselves and feel passionate about supporting students with shared lived experiences.

Why did we use matching?

Random assignment is the most rigorous method of determining the impact of a program. Random assignment of enough participants ensures that all characteristics that could affect student performance are balanced and equal between students who participate in the program and those who do not. However, random assignment is not always practical or ethical. Since we could not randomly assign teachers and students to participate in TEAMS, we used statistical methods to create a matched sample of teachers and students who are similar to program participants key areas—except that they did not participate in TEAMS.

These differences can make it difficult to distinguish whether potential changes in student outcomes result from the professional development, teacher motivation, or characteristics of the students being taught. To determine whether participation in TEAMS had an impact on student outcomes, we needed to find a comparison group of teachers and students who were similar to TEAMS teachers and students but did not participate in the program.

Compared to other teachers in the state or district, TEAMS teachers taught a higher percentage of English learner students before they enrolled in the program. As a result, TEAMS teachers may have been more motivated than their peers to enroll in professional development focused on supporting English learner students. Most TEAMS teachers shared in focus groups that the primary reason they enrolled in TEAMS was to "better support" the increasing number of English learner students in their schools and classroom. One teacher said:

> **"I teach at an elementary school that has a very high population of emergent bilinguals and I just wanted them to have the best education that I could give them. And I felt that I wasn't equipped, so I sought out ways to educate myself to better educate them."**
>
> **– Cohort 1 TEAMS teacher**

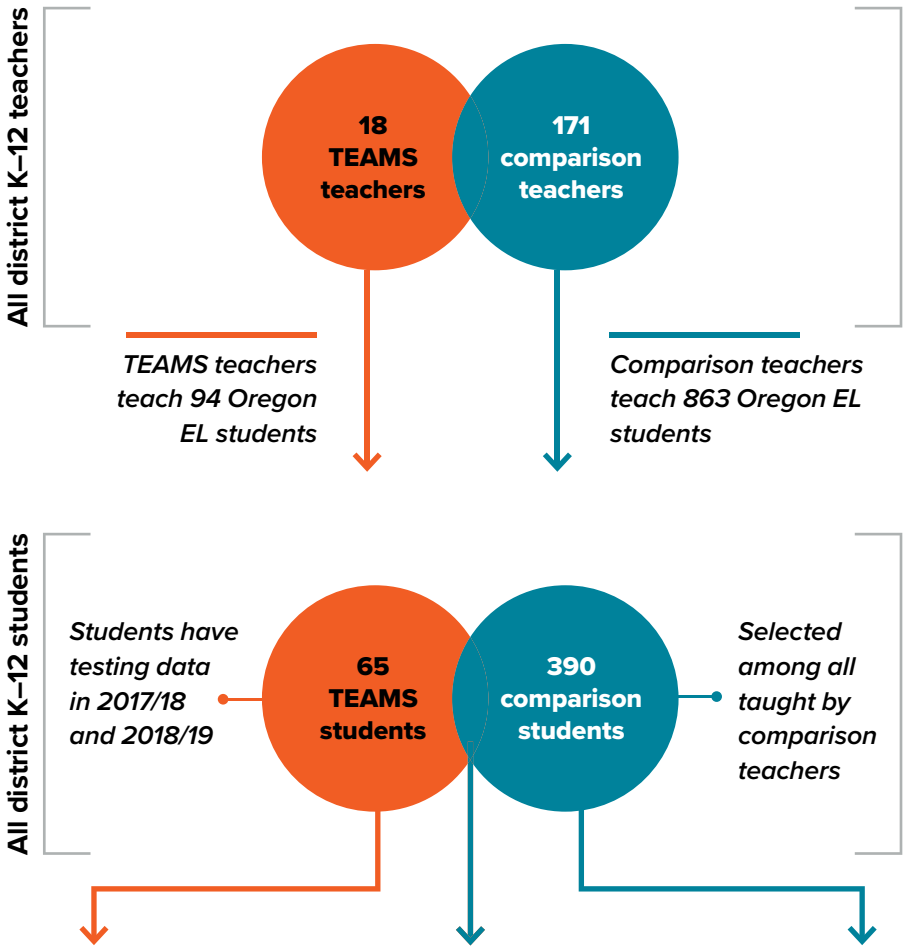
To overcome the potential for selection bias in this study, we used a two-step matching procedure (figure 2). Through this process, we identified a group of comparison teachers in TEAMS school districts who appeared likely to enroll in TEAMS. We then selected a subset of their students whose demographic characteristics, program enrollment, and academic achievement were statistically indistinguishable from those of TEAMS students.

Ultimately, we compared 65 unique TEAMS students to 390 unique comparison students. We examined English language arts outcomes for 34 TEAMS English learner students and 206 comparison students and English language proficiency outcomes for 59 TEAMS English learner students and 237 comparison students.

We measured baseline equivalence to ensure that the TEAMS students and comparison students were well matched, with no significant observable differences in their personal and demographic characteristics, eligibility for English learner services and special education, and prior academic achievement in the same content area as the outcome. We also measured baseline equivalence for the teachers. This is not required nor expected of a student-level analysis (What Works Clearinghouse, 2020a); however, we believe that the two-step matching procedure increases the internal validity of the study.

For more details on the methods used in this study, see appendix B.

Figure 2. We used a two-step matching process to identify a set of comparison students and teachers



Step 1. Comparing teachers

We use ***propensity score matching*** to identify comparison teachers who did not participate in TEAMS but appear to have the same "propensity" to join as those who did vis a vis their demographic characteristics, education, experience, and student population in 2015, the year before enrollment.

Step 2. Comparing students

We use ***coarsened exact matching*** to select a subset of comparison students who have similar demographic characteristics, program participation, and academic performance to those taught by TEAMS teachers in 2016, the year before impact, among all students taught by comparison teachers. We then test for baseline equivalence to ensure that the only difference between students is that one group had TEAMS teachers and one did not.

Step 3. Comparing impact

We use ***hierarchical linear modeling*** to measure the impact of TEAMS teachers on student assessment scores, while accounting for any remaining differences in students taught by comparison teachers by controlling for prior achievement, program participation, gender, race, grade level, attendance rate, and district.

Source: Education Northwest TEAMS evaluation plan

TEAMS IMPACT ON ENGLISH LANGUAGE ARTS OUTCOMES

English learner students learn grade-level content—such as language arts, math, science, and social studies—while developing English language proficiency. Doing "double the work" of other students is not easy and requires specific, intentional language supports from teachers (Short & Fitzsimmons, 2007). Despite the high numbers of English learners in Oregon, teacher preparation programs in the state do not always teach these skills and supports.

Cohort 1 teachers' participation in TEAMS had a significant and moderately strong impact on English learner students' 2018/19 assessment outcomes in English language arts, raising scores by 13.6 percentile points.

However, the number of English learner students in this analysis is small, and we do not know how students in our sample with full test outcomes differ from their peers without full outcomes.

TEAMS provides professional development to teachers so they can integrate language acquisition strategies into content area courses. These supports are expected to impact English learner students' achievement. Specifically, we theorize that a teacher's participation in TEAMS will improve their students' English language arts and English language proficiency scores.

To test our theory, we compared the 2018/19 Smarter Balanced English language arts assessment outcomes of English learner students taught by TEAMS teachers to a matched sample of comparison students taught by comparison teachers.

MATCHING TEACHERS AND STUDENTS FOR THE ENGLISH LANGUAGE ARTS ANALYSIS

We identified 11 TEAMS teachers in five districts with English language arts-tested English learner students and matched them to 87 comparison teachers. We were able to meet baseline equivalence for matched teachers in all areas except elementary teachers' gender and education level (see tables A4 and A5 in appendix A). TEAMS teachers taught 34 English learner students in grades 4 to 8 who had English language arts scores in 2017/18 and 2018/19. We matched them to 206 comparison English

learner students with similar demographic characteristics, English proficiency levels, eligibility for the National School Lunch Program, and previous academic achievement in the same content area as the outcome.

Student baseline equivalence in the English language arts analysis was satisfied. TEAMS students and comparison students were similar enough to be an "apples-to-apples" comparison (table 2). For example, there were no differences (effect size of 0.00) in students' English learner status and eligibility for the National School Lunch Program, with 99 percent of both groups identifying as Latinx with a Spanish home language. (Throughout this report we use Latinx rather than Latina or Latino to avoid gender-specific labels.)

There were minor differences (effect sizes between 0.09 and 0.11) in their baseline school attendance rate, English language proficiency, and English language arts scores. We accounted for these differences in the analysis.

The groups were not equivalent in one characteristic: gender. A lower proportion of TEAMS students than comparison students were girls (20% and 38%, respectively). While this difference is concerning, gender is not a necessary equivalency for this analysis (What Works Clearinghouse, 2020a; 2020b). We accounted for this difference in the analysis, however, it may bias the analysis against TEAMS, since girls tend to outperform boys on tests such as the Smarter Balanced assessment (Voyer & Voyer, 2014).

What is baseline equivalence?

We wanted to make sure that the only difference between TEAMS and comparison students was that one group had TEAMS teachers and one did not.

Baseline equivalence is a way of measuring how similar the groups were at baseline, before being taught by TEAMS or comparison teachers. It ensures that the characteristics that could affect future achievement are the same. These include eligibility for special education and the National School Lunch Program, race/ethnicity, and prior academic achievement.

We use effect size—a measure based on standard deviation units—to quantify the difference between groups and establish baseline equivalence.

- **Groups are equivalent when effect sizes are 0.05 or less**
- **Groups are equivalent with statistical adjustment when effect sizes are between 0.05 and 0.25**
- **Groups are not equivalent when effect sizes are greater than 0.25**

(What Works Clearinghouse, 2015)

Table 2. Baseline equivalence was satisfied for all required characteristics for English language arts analysis in 2017/18, but a lower proportion of TEAMS students were female than comparison students

	TEAMS students (N = 34)	Comparison students (N = 206)	Difference	Pooled SD	Effect size	Met baseline equivalency
National School Lunch Program eligibility 2017/18 (percent)	100% (0)	100% (0.07)	0	0.07	0[c]	Yes
Special education eligibility 2017/18 (percent)	30% (0.50)	30% (0.46)	0	0.47	0[c]	Yes
Female (percent)	20% (0.46)	38% (0.49)	-0.18	0.48	-.53[c]	No
Latinx (percent)	99% (0.24)	99% (0.12)	0	0.14	0[c]	Yes
Attendance rate 2017/18 (percent)	94% (0.05)	94% (0.05)	0.59	.051	.11[g]	With adjustment
English language proficiency 2017/18 (level)	2.01 (0)	1.99 (0.16)	0.02	0.14	.11[g]	With adjustment
English language arts score 2017/18 (SD)	-1.21 (0.56)	-1.26 (0.54)	0.05	0.54	.086[g]	With adjustment
Spanish home language (percent)	99% (0.29)	99% (0.12)	0	0.15	0[c]	Yes
Grade 4 2018/19 (percent)	24% (0.24)	24% (0.43)	0	0.41	0[c]	Yes
Grade 5 2018/19 (percent)	4% (0.17)	4% (0.19)	0	0.19	0[c]	Yes
Grade 6 2018/19 (percent)	22% (0.36)	22% (0.41)	0	0.41	0[c]	Yes
Grade 7 2018/19 (percent)	33% (0.50)	33% (0.47)	0	0.48	0[c]	Yes
Grade 8 2018/19 (percent)	17% (0.41)	17% (0.37)	0	0.38	0[c]	Yes

SD is standard deviation.

Note: Standard deviations are shown parenthesis. Effect sizes represent the Cox index ([c]) for categorical variables and Hedge's G for continuous variables ([g]). The sample includes 11 TEAMS teachers and 87 comparison teachers. See table A8 in appendix A for baseline equivalence for all students, including non-English learners. We use Latinx rather than Latina or Latino to avoid gender-specific labels.

Source: Education Northwest analysis of 2017/18 and 2018/19 Oregon Department of Education data.

MEASURING TEAMS IMPACT ON ENGLISH LANGUAGE ARTS

We used two-level hierarchical linear modeling—a form of linear regression that nests students in schools and teachers' classrooms—to estimate the impact of participating in TEAMS on student performance on the 2018/19 English language arts assessment and account for the remaining differences between TEAMS and comparison students and teachers.

Cohort 1 teachers' participation in TEAMS had a positive impact on English learner students' English language arts outcomes. **English learner students taught by TEAMS teachers had English language arts test scores 0.348 standard deviations higher than comparison students taught by comparison teachers** (table 3). This means that **TEAMS had a 13.6 percentile point impact on English language arts scores,** the equivalent of moving the performance of an average English learner student taught by a Cohort 1 TEAMS teacher from the 50th percentile to the 64th percentile (figure 3).

What is a standard deviation?

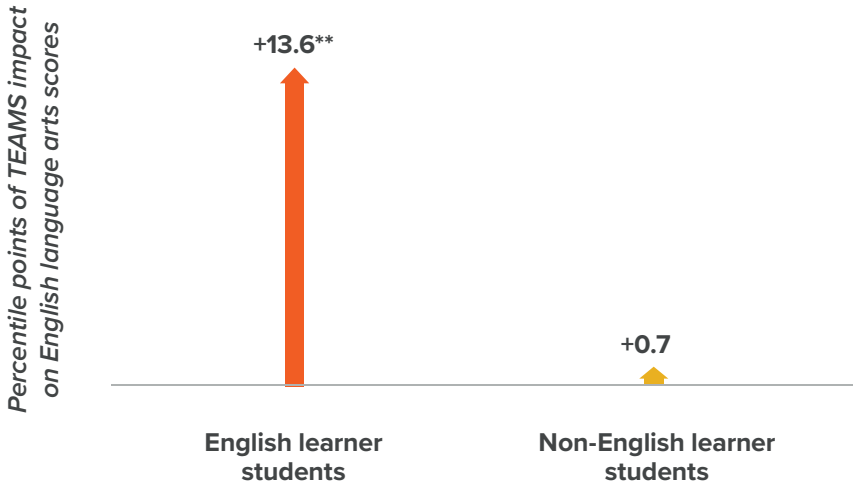
A standard deviation is a way of expressing how far a score is from the mean, or in this case how much having a TEAMS teacher moved student scores from the mean.

An impact of 0.348 standard deviations means that having a TEAMS teacher improved scores 13.6 percentile points from the predicted score they would have if taught by a teacher who did not participate in TEAMS.

TEAMS did not appear to impact the English language arts outcomes of non-English learner students. Non-English learner students taught by TEAMS teachers had English language arts test scores 0.020 standard deviation units higher than comparison students. This is a negligible difference and corresponds to less than 1 percentile point.

We also checked our analysis for consistency by using other regression models. In all cases, TEAMS participation had a similar impact on English learner students' English language arts outcomes (see table A9 in appendix A).

Figure 3. TEAMS improved the English language arts outcomes of English learner students by 14 percentile points



** $p \leq .01$

Source: Education Northwest analysis of 2017/18 and 2018/19 Oregon Department of Education data.

LIMITATIONS

The number of English learner students in this analysis is small (34 TEAMS students and 206 comparison students). These samples include all TEAMS and comparison students who had English language arts test scores in 2017/18 and 2018/19, but they represent only a small portion of the students taught by TEAMS and comparison teachers.

We do not know how students in our sample with full test outcomes differ from their peers who did not have full outcomes. Because of this limitation, we encourage caution in considering these results. We are confident that within our analytic sample the TEAMS students significantly outperformed comparison students on the 2018/19 English language arts assessment. The impact on students outside our analytic sample is unknown. An extension of TEAMS funding, provided by the Office of English Language Acquisition through 2027, may allow for additional studies to explore this impact further and understand how students who have full test outcomes may be different from those who do not.

Table 3. TEAMS had a positive impact on English learner students' performance on Oregon's English language arts assessment in 2018/19

	English learner students (N = 240)	Non-English learner students (N = 7,345)
TEAMS impact (Z score) 2018/19 (SD)	0.348** (0.12)	0.018 (0.05)
English language arts 2017/18 (SD)	0.507*** (0.08)	0.684*** (0.02)
Special education eligibility 2017/18 (SD)	0.112 (0.327)	0.033 (0.27)
National School Lunch Program eligibility 2017/18 (SD)	-0.071 (0.41)	0.158 (0.48)
Female Ever (SD)	0.116 (0.08)	0.067*** (0.01)
Latinx Ever (SD)	0.972 (0.54)	0.231 (0.37)
Attendance 2017/18 (SD)	0.003 (0.01)	0.007*** (0.00)
Score of 2 on ELPA21 2017/18 (SD)	0.495 (0.33)	–
Score of 3 on ELPA21 2017/18 (SD)	0.699 (0.51)	–
Constant	-1.601 (0.98)	-0.585 (0.33)
District fixed effect	✓	✓
CEM Strata	✓	✓
Within-teacher ICC	.029	.069

*$p \leq .05$, ** $p \leq .01$, ***$p \leq .001$

SD is standard deviation. ICC is intraclass correlation coefficient.

Note: Standard deviation in parentheses. The English learner sample includes 34 TEAMS students taught by 11 TEAMS teachers and 206 comparison students taught by 87 comparison teachers. The within-teacher intraclass correlation coefficient derived from an unconditional hierarchical linear model was 0.227 for students classified as English learners and 0.248 for non-English learners.

Source: Education Northwest analysis of 2017/18 and 2018/19 Oregon Department of Education data.

TEAMS IMPACT ON ENGLISH LANGUAGE PROFICIENCY

TEAMS professional development supports teachers to integrate English language acquisition strategies into content area classes. We expect, therefore, that a teacher's participation in TEAMS may impact their students' English language development.

This section focuses on the impact of TEAMS participation on four English language proficiency domains—reading, writing, speaking, and listening. We examined how English learner students taught by TEAMS teachers performed on the 2018/19 ELPA21 assessment in comparison to a matched sample of students taught by comparison teachers.

Cohort 1 teachers' participation in TEAMS had a minimal impact on English learner students' performance on Oregon's ELPA21 English language proficiency assessment in 2018/19 compared to their peers for the reading, writing, speaking, and listening domains.

However, the number of students in this analysis is small, and we do not know how students in our sample with full test outcomes differ from their peers who did not have full outcomes.

MATCHING TEACHERS AND STUDENTS AND ESTABLISHING BASELINE EQUIVALENCE

After matching, we identified 59 TEAMS English learner students and 237 comparison students within the classrooms of 17 TEAMS teachers and 107 comparison teachers in five districts. Baseline equivalence for students (table 4) and teachers (see tables A6 and A7 in appendix A) was achieved among all key variables.

Table 4. Student baseline equivalence was satisfied for the English language proficiency analysis in 2017/18

	TEAMS students (N = 59)	Comparison students (N = 237)	Difference	Pooled SD	Effect Size	Met baseline equivalency
National School Lunch Program eligibility 2017/18 (percent)	94% (0.22)	93% (0.25)	0.01	0.25	-0.06[c]	With adjustment
Special education eligibility 2017/18 (percent)	18% (0.41)	18% (0.38)	0.00	0.39	0.00[c]	Yes
Female (percent) Ever (percent)	33% (0.50)	33% (0.47)	0	0.48	0[c]	Yes
Latinx (percent) Ever (percent)	95% (0.25)	95% (0.23)	0	0.23	0[c]	Yes
Attendance rate 2017/18 (percent)	94% (0.05)	93% (0.06)	0.82	0.06	0.14[g]	With adjustment
ELPA21 reading score 2017/18 (SD)	-0.19 (0.70)	-0.09 (0.75)	-0.10	0.74	-0.14[g]	With adjustment
ELPA21 writing score 2017/18 (SD)	-0.12 (0.63)	0.04 (0.72)	-0.17	0.71	-0.24[g]	With adjustment
ELPA21 speaking score 2017/18 (SD)	-0.01 (0.78)	0.18 (0.76)	0.10	0.74	-0.13[g]	With adjustment
ELPA21 listening score 2017/18 (SD)	-0.05 (0.74)	0.11 (0.67)	-0.16	0.68	-0.23[g]	With adjustment
Grade 1 2018/19 (percent)	0.05 (0.35)	0.05 (0.21)	0	0.24	0[c]	Yes
Grade 2 2018/19 (percent)	0.35 (0.38)	0.35 (0.48)	0	0.46	0[c]	Yes
Grade 3 2018/19 (percent)	0.19 (0.38)	0.19 (0.39)	0	0.39	0[c]	Yes

	TEAMS students (N = 59)	Comparison students (N = 237)	Difference	Pooled SD	Effect Size	Met baseline equivalency
Grade 4 2018/19 (percent)	0.01 (0.18)	0.01 (0.11)	0	0.11	0[c]	Yes
Grade 5 2018/19 (percent)	0.01 (0.13)	0.01 (0.09)	0	0.09	0[c]	Yes
Grade 6 2018/19 (percent)	0.09 (0.30)	0.09 (0.28)	0	0.28	0[c]	Yes
Grade 7 2018/19 (percent)	0.22 (0.44)	0.22 (0.42)	0	0.42	0[c]	Yes
Grade 8 2018/19 (percent)	0.08 (0.33)	0.08 (0.28)	0	0.28	0[c]	Yes

ELPA21 is Oregon's English language proficiency assessment. SD is standard deviation.

Note: Standard deviation in parentheses. Effect sizes represent the Cox index ([c]) for categorical variables and Hedge's G ([g]) for continuous variables. The sample includes students taught by 17 TEAMS teachers and 107 comparison teachers. We use Latinx rather than Latina or Latino to avoid gender-specific labels.

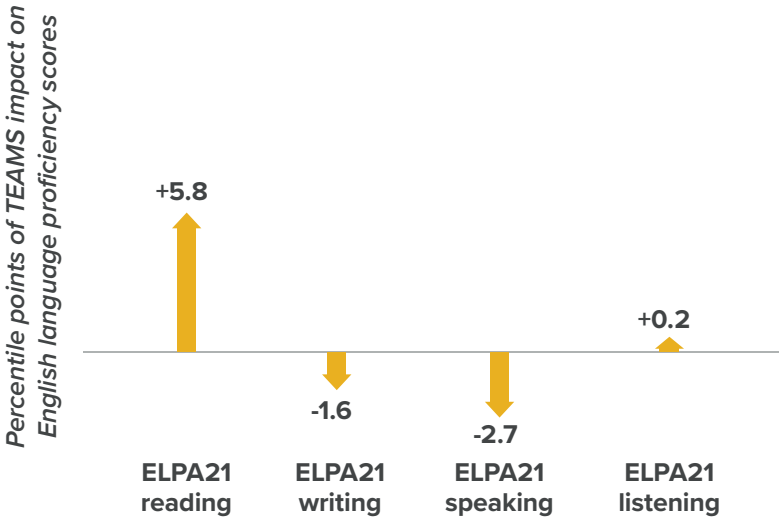
Source: Education Northwest analysis of 2017/18 and 2018/19 Oregon Department of Education data.

MEASURING TEAMS IMPACT ON ENGLISH LANGUAGE PROFICIENCY

We used two-level hierarchical linear modeling to measure the impact of TEAMS professional development on students' English language proficiency. We accounted for students' prior achievement on all four ELPA21 language domains, eligibility for special education and the National School Lunch Program, student demographic characteristics, home language, and attendance rate, as well as the remaining differences between teachers.

TEAMS did not appear to impact the English language proficiency outcomes of English learner students. **English learner students taught by TEAMS teachers had English language proficiency testing scores very similar to their matched peers, with estimates of impact ranging from -0.017 to +0.103 standard deviations units (**table 5). These differences are negligible in terms of statistical significance and magnitude and represent impact of less than 5.8 percentile points (figure 4).

Figure 4. TEAMS did not impact the English language proficiency scores of English learner students



ELPA21 is Oregon's English language proficiency assessment.

Source: Education Northwest analysis of 2017/18 and 2018/19 Oregon Department of Education data.

Table 5. TEAMS had minimal impact on English learner students' performance on Oregon's English language proficiency assessment in 2018/19

	ELPA21 reading (N = 296)	ELPA21 writing (N = 296)	ELPA21 speaking (N = 296)	ELPA21 listening (N = 296)
TEAMS impact (Z score) 2018/19 (SD)	0.147 (0.10)	-0.039 (0.05)	-0.067 (0.09)	0.005 (0.06)
Reading baseline 2017/18 ELPA21 (SD)	0.325*** (0.09)	-0.001 (0.05)	-0.188* (0.08)	0.021 (0.06)
Writing baseline 2017/18 ELPA21 (SD)	0.365*** (0.08)	0.108* (0.05)	-0.019 (0.08)	-0.194*** (0.06)
Speaking baseline 2017/18 ELPA21 (SD)	0.039 (0.06)	0.027 (0.03)	0.208*** (0.06)	0.092* (0.04)
Listening baseline 2017/18 ELPA21 (SD)	0.074 (0.08)	-0.016 (0.04)	-0.005 (0.07)	0.240*** (0.05)
Special education eligibility 2018/19 (SD)	0.060 (0.57)	0.089 (0.31)	-0.042 (0.54)	0.384 (0.36)
National School Lunch Program eligibility 2018/19 (SD)	0.093 (0.17)	0.005 (0.09)	0.028 (0.16)	-0.043 (0.11)

	ELPA21 reading (N = 296)	ELPA21 writing (N = 296)	ELPA21 speaking (N = 296)	ELPA21 listening (N = 296)
Female Ever (SD)	0.221 (0.69)	0.361 (0.37)	0.360 (0.65)	0.327 (0.44)
Latinx Ever (SD)	-0.717 (0.69)	0.089 (0.37)	-0.448 (0.65)	-0.392 (0.44)
Attendance 2017/18 (SD)	0.011 (0.01)	0.007* (0.00)	0.001 (0.01)	0.008* (0.00)
Intercept	-0.711 (0.70)	-0.731 (0.38)	0.001 (0.66)	-0.389 (0.44)
District fixed effect	✓	✓	✓	✓
CEM Strata	✓	✓	✓	✓
Within-teacher ICC	<.000	<.000	.025	<.000

*$p \leq .05$, ** $p \leq .01$, ***$p \leq .001$

SD is standard deviation. ICC is intraclass correlation coefficient.

Note: Standard deviation in parentheses. The sample includes 59 TEAMS English learner students taught by 17 TEAMS teachers, and 237 comparison students taught by 107 comparison teachers. The within-teacher intraclass correlation coefficient derived from an unconditional hierarchical linear model was 0.227 for students classified as English learners and 0.248 for non-English learners.

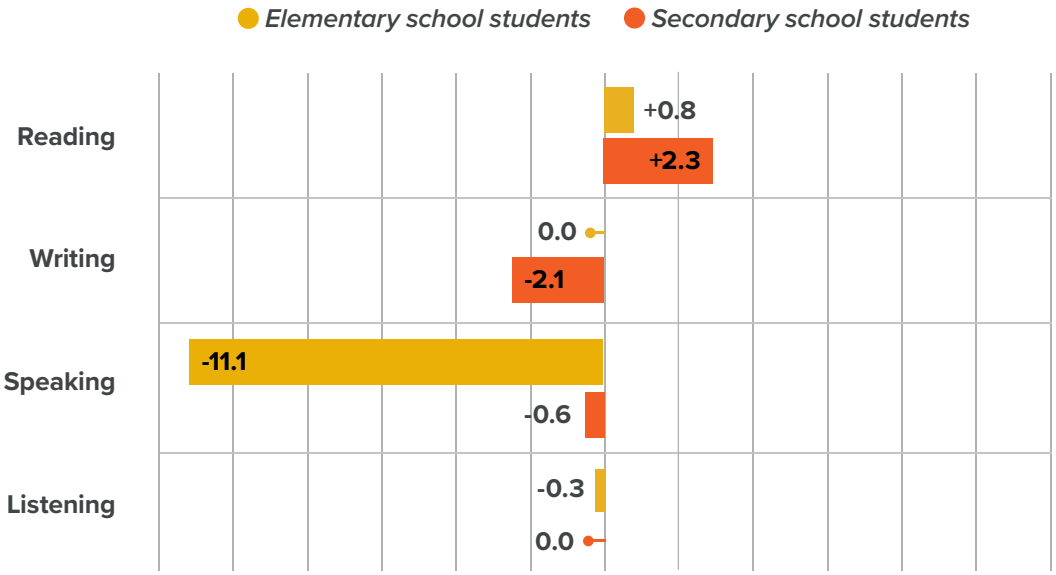
Source: Education Northwest analysis of 2017/18 and 2018/19 Oregon Department of Education data.

We also created two alternative models to test for consistency. In all cases, participation in TEAMS had a negligible magnitude of impact and was not statistically significant (see table A10 in appendix A).

EXAMINING TEAMS IMPACT AT DIFFERENT GRADE LEVELS

Finally, we examined the impact of TEAMS teachers on the English language proficiency outcomes of elementary students and secondary students separately (see table A11 in appendix A). The impact of TEAMS was not statistically significant on either group's English language proficiency outcomes. However, estimates suggest that secondary TEAMS teachers had a larger positive impact on English language proficiency than elementary TEAMS teachers in all four language domains (figure 5). This is most evident in student achievement in the speaking domain, with a difference of more than 10 percentile points. However, these estimates were not statistically significant, so we cannot confidently say that these differences are meaningful.

Figure 5. Secondary TEAMS teachers may have a larger positive impact on their students' English language proficiency scores than elementary TEAMS teachers



Source: Education Northwest analysis of 2017/18 and 2018/19 Oregon Department of Education data. See table A11 in appendix A for full details.

It is unclear why secondary TEAMS teachers have a greater impact on English language proficiency than elementary TEAMS teachers. Similarly, it is unclear why elementary TEAMS teachers appeared to have a slightly negative, albeit not statistically significant, impact on their students' speaking and reading scores in comparison to their matched peers. This question will be explored in greater detail in the future.

LIMITATIONS

As in the previous analysis, the number of students in this analysis is small, with 59 TEAMS students taught by 17 TEAMS teachers and 237 comparison students taught by 107 comparison teachers. These samples include all TEAMS and matched comparison students who had English language proficiency test scores in 2017/18 and 2018/19, but they represent only a small portion of the students taught by TEAMS and comparison teachers. We do not know how students in our sample with full test outcomes differ from their peers who did not have full outcomes. The continuation of TEAMS funding may allow for additional exploration of the impact of TEAMS on English language proficiency in the future.

CONCLUSION

The impact of TEAMS professional development on students' English language arts outcomes is promising. TEAMS had a moderately powerful positive impact on student content knowledge growth. This suggests that TEAMS professional development allows teachers to successfully integrate language acquisition strategies into content area courses, which improves their students' English language arts achievement. However, we consider these findings to be preliminary. While we are confident that the impact is real in our sample, the sample size was small and may not be generalizable to other students.

A new grant supporting TEAMS from the Office of English Language Acquisition will allow us to continue to explore the impact of TEAMS professional development on student outcomes. In future analysis, we hope to include seven cohorts of TEAMS participants (Cohort 1 plus three additional cohorts from the original grant period and three cohorts from the new grant period). This will substantially increase the number of students in the sample and allow us to explore whether TEAMS' dual language specialization has the same impact as its ESOL endorsement. We can also explore the impact of TEAMS after the onset of the COVID-19 pandemic, which we were unable to do in this analysis.

REFERENCES

Brogan, F. T. (2020, March 27). Oregon waiver of assessment, accountability and certain reporting requirements due to widespread COVID-19 school closures response letter. Office of Elementary and Secondary Education, U.S. Department of Education. **https://oese.ed.gov/files/2020/04/OR-Covid19-WaiverResponse.pdf**

Oregon Department of Education. (2021). *English learners in Oregon annual report 2019-20.* Author. **https://www.oregon.gov/ode/students-and-family/equity/EngLearners/Documents/Oregon%20English%20Learners%20Report%202019-20%20Final.pdf**

Rosenblum, I. (2021, April 6). Oregon waiver of assessment requirements for 2020–21 response letter. Office of Elementary Secondary Education, U.S. Department of Education. **https://oese.ed.gov/files/2021/05/OR-assessment-response-letter2.pdf**

Short, D. J., & Fitzsimmons, S. (2007). *Double the work: Challenges and solutions to acquiring language and academic literacy for adolescent English language learners: A report to Carnegie Corporation of New York.* Alliance for Excellent Education. **https://media.carnegie.org/filer_public/bd/d8/bdd80ac7-fb48-4b97-b082-df8c49320acb/ccny_report_2007_double.pdf**

Thompson, K. D. (Principal Investigator). (2021). *Teachers Educating All Multilingual Students 2.0* (Award No. T365Z210173). English Language Acquisition National Professional Development Grant. Office of English Language Acquisition, U.S. Department of Education.

U.S. Department of Justice, & U.S. Department of Civil Rights. (2015) *Ensuring English learner students can participate meaningfully and equally in educational programs.* Authors. **https://www2.ed.gov/about/offices/list/ocr/docs/dcl-factsheet-el-students-201501.pdf**

Voyer, D., & Voyer, S. D. (2014). Gender differences in scholastic achievement: A meta-analysis. *Psychological Bulletin, 140*(4), 1174–1204. **https://www.apa.org/pubs/journals/releases/bul-a0036620.pdf**

What Works Clearinghouse. (2015). *WWC standards brief.* National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. **https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc_brief_baseline_080715.pdf**

What Works Clearinghouse. (2020a). *What Works Clearinghouse standards handbook, version 4.1*. National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. **https://ies.ed.gov/ncee/wwc/Docs/referenceresources/WWC-Standards-Handbook-v4-1-508.pdf**

What Works Clearinghouse. (2020b). *WWC evidence review protocol for interventions for English learners, version 4.0*. National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. **https://ies.ed.gov/ncee/wwc/Docs/ReferenceResources/EL_Protocol_v_4_0_Feb2020.pdf**

APPENDIX A. DATA TABLES

Table A1. Baseline descriptive information of TEAMS teachers compared to district and state averages in 2016/17 before matching

				District and TEAMS	
	State comparison (N = 24,387)	District comparison (N = 4,242)	TEAMS (N = 35)	Difference	P-value
EXPERIENCE AND QUALIFICATIONS					
Mean years in district	9.05	8.98	5.37	-3.61	0.0058**
Less than a bachelor's degree	0%	0%	0%	-0.00	0.9232
Bachelor's degree	8%	12%	6%	-0.06	0.2810
Postbaccalaureate credits	18%	7%	11%	0.04	0.3758
Master's degree	74%	81%	83%	0.02	0.7288
Ph.D. or other doctoral degree	1%	0%	0%	-0.00	0.6992
ESOL endorsement	15%	14%	0%	-0.14	0.0254*
CLASSROOM INFORMATION					
Elementary (K–5) teacher	42%	42%	64%	0.22	0.0182*
Secondary (6–12) teacher	61%	59%	36%	-0.23	0.0133*
Mean number of students	107.47	116.63	67.04	-49.59	0.0209*
English learner students	10%	10%	19%	0.09	0.0018**

				District and TEAMS	
	State comparison (N = 24,387)	District comparison (N = 4,242)	TEAMS (N = 35)	Difference	P-value
Students eligible for National School Lunch Program	61%	46%	68%	0.22	0.0000**
DEMOGRAPHIC CHARACTERISTICS					
American Indian or Alaska Native	1%	1%	3%	0.02	0.0556
Asian	2%	3%	0%	-0.03	0.3311
Black	1%	1%	0%	-0.01	0.6736
Latinx	4%	5%	11%	0.07	0.0515*
Multiracial	2%	2%	6%	0.04	0.0455
Native Hawaiian/ Pacific Islander	0%	0%	0%	-0.00	0.8292
White	91%	90%	80%	-0.10	0.0444*
Male	31%	30%	11%	-0.19	0.0146*

*$p < .05$, ** $p < .01$

ESOL is English for speakers of other languages.

Note: We use Latinx rather than Latina or Latino to avoid gender-specific labels.

Source: Education Northwest analysis of 2016/17 Oregon Department of Education data.

Table A2. Baseline descriptive information of English learner TEAMS students compared to district and state averages in 2017/18 before matching

				District and TEAMS	
	State comparison (N = 28,079)	District comparison (N = 4,411)	TEAMS students (N = 237)	Difference	P-value
PROGRAM PARTICIPATION					
National School Lunch Program eligible	93%	85%	95%	0.10	0.0001
Special education eligible	26%	26%	30%	0.03	0.2803
Gifted and talented eligible	0%	0%	0%	-0.00	0.6336
Migrant classified	16%	6%	6%	0.00	0.9116
DEMOGRAPHIC CHARACTERISTICS					
American Indian or Alaska Native	2%	0%	1%	0.01	0.0002
Asian or Pacific Islander	8%	11%	4%	-0.07	0.0023
Black	3%	3%	1%	-0.02	0.1213
Latinx	81%	77%	90%	0.13	0.0000
Multiracial	1%	1%	1%	0.00	0.9285
White	6%	8%	2%	-0.06	0.0036
Female	44%	44%	48%	0.04	0.2961
ASSESSMENT AND ATTENDANCE					
ELPA21 reading (Z score)	-0.24	-0.13	-0.13	0.00	0.9815
ELPA21 writing (Z score)	-0.22	-0.09	-0.09	-0.00	0.9811
ELPA21 speaking (Z score)	-0.17	-0.02	0.05	0.07	0.3134
ELPA21 listening (Z score)	-0.20	-0.11	-0.04	0.07	0.3401

				District and TEAMS	
	State comparison (N = 28,079)	District comparison (N = 4,411)	TEAMS students (N = 237)	Difference	P-value
Smarter Balanced math (Z score)	-1.12	-1.01	-1.17	-0.16	0.0424
Smarter Balanced ELA (Z score)	-1.24	-1.20	-1.24	-0.04	0.5693
Attendance (percent)	93%	93%	94%	0.01	0.0127

*$p < .05$, ** $p < .01$

ELA is English language arts. ELPA21 is Oregon's English language proficiency assessment.

Note: We use Latinx rather than Latina or Latino to avoid gender-specific labels.

Source: Education Northwest analysis of 2017/18 Oregon Department of Education data.

Table A3. Baseline descriptive information of all TEAMS students, including English learner and non-English learner students, compared to district and state averages in 2017/18 before matching

				District and TEAMS	
	State comparison (N = 389,159)	District comparison (N = 63,056)	TEAMS students (N = 3,027)	Difference	P-value
PROGRAM PARTICIPATION					
National School Lunch Program eligible	58%	43%	51%	7%	0.0000
English learner classified	8%	7%	9%	1%	0.0359
Special education eligible	16%	14%	13%	< -1%	0.6426
Gifted and talented eligible	3%	4%	2%	-3%	0.0000
Migrant classified	3%	1%	1%	0%	0.2536
DEMOGRAPHIC CHARACTERISTICS					
American Indian or Alaska Native	1%	1%	1%	0%	0.6016

				District and TEAMS	
	State comparison (N = 389,159)	District comparison (N = 63,056)	TEAMS students (N = 3,027)	Difference	P-value
Asian or Pacific Islander	4%	9%	4%	-5%	0.0000
Black	2%	2%	1%	0%	0.0954
Latinx	26%	22%	26%	4%	0.6967
Multiracial	6%	6%	6%	0%	0.1310
White	61%	60%	62%	1%	0.3189
Female	48%	49%	48%	-1%	0.6016
ASSESSMENT AND ATTENDANCE					
ELPA21 reading (Z score)	0.00	0.13	0.09	-0.03	0.5986
ELPA21 writing (Z score)	0.02	0.15	0.11	-0.04	0.5295
ELPA21 speaking (Z score)	0.01	0.16	0.21	0.05	0.4208
ELPA21 listening (Z score)	0.01	0.11	0.15	0.04	0.5367
Smarter Balanced math (Z score)	-0.04	0.22	0.05	-0.17	0.0000
Smarter Balanced ELA (Z score)	-0.03	0.18	-0.00	-0.18	0.0000
Attendance (percent)	93%	93%	93%	<-1%	0.0000

*$p < .05$, ** $p < .01$

ELA is English language arts. ELPA21 is Oregon's English language proficiency assessment.

Note: We use Latinx rather than Latina or Latino to avoid gender-specific labels.

Source: Education Northwest analysis of 2017/18 Oregon Department of Education data.

Table A4. Baseline equivalence in English language arts in 2016/17 for elementary teachers after matching

	TEAMS teachers (N = 6)	Comparison (N = 192)	Difference	Pool SD	Effect size
White 2016/17 (percent)	86% (0.52)	89% (0.32)	-0.02	0.33	-0.13[c]
Male Ever (percent)	16% (0.41)	31% (0.46)	-0.15	0.46	-0.51[c]
Master's degree or higher 2016/17 (percent)	98% (0.00)	83% (0.38)	0.15	0.37	1.43[c]
ESOL endorsed 2016/17 (percent)	0 –	0 –	0	0	–
Years in district 2016/17 (mean)	5.56 (3.15)	6.5 (5.57)	-0.94	5.52	-0.17[g]
Students taught 2016/17 (mean)	39.02 (2.50)	45.04 (63.27)	-6.02	62.46	-0.10[g]
English learner students 2016/17 (percent)	13% (8.59)	13% (14.14)	0.20	14.02	0.01[g]
National School Lunch Program eligible students 2016/17 (percent)	61% (27.76)	55% (28.12)	5.71	28.11	0.20[g]
Students' mean ELA score 2016/17 (Z score)	0.08 (0.55)	0.08 (0.42)	-0.01	0.43	-0.02[g]

ELA is English language arts. ESOL is English for speakers of other languages. SD is standard deviation.

Note: Standard deviations are shown parenthesis. Effect sizes represent the Cox index ([c]) for categorical variables and Hedge's G for continuous variables ([g]).

Source: Education Northwest analysis of 2016/17 Oregon Department of Education data.

Table A5. Baseline equivalence in English language arts in 2016/17 for secondary teachers after matching

	TEAMS teachers (N = 9)	Comparison (N = 767)	Difference	Pool SD	Effect size
White 2016/17 (percent)	94% (0.33)	92% (0.27)	0.02	0.27	0.21[c]
Male Ever (percent)	36% (0.44)	42% (0.49)	-0.06	0.49	-0.16[c]
Master's degree or higher 2016/17 (percent)	83% (0.33)	82% (0.39)	0.01	0.39	0.04[c]
ESOL endorsed 2016/17 (percent)	0 –	0 –	0	0	0[c]
Years in district 2016/17 (mean)	9.15 (6.72)	9.88 (7.51)	-0.73	7.50	-0.10[g]
Students taught 2016/17 (mean)	191.25 (55.52)	193.12 (105.31)	-1.87	104.92	-0.02[g]
English learner students 2016/17 (percent)	5.3% (10.26)	6% (6.63)	-0.25	6.67	-0.04[g]
National School Lunch Program eligible students 2016/17 (percent)	44% (11.95)	43% (21.79)	0.64	21.71	0.03[g]
Students' mean ELA score 2016/17 (Z score)	0.07 (0.55)	0.06 (0.56)	0.01	0.56	0.02[g]

ELA is English language arts. ESOL is English for speakers of other languages. SD is standard deviation.

Note: Standard deviations are shown parenthesis. Effect sizes represent the Cox index ([c]) for categorical variables and Hedge's G for continuous variables ([g]).

Source: Education Northwest analysis of 2016/17 Oregon Department of Education data.

Table A6. Baseline equivalence in English language proficiency in 2016/17 for elementary teachers after matching

	TEAMS teachers (N = 10)	Comparison (N = 291)	Difference	Pool SD	Effect size
White 2016/17 (percent)	84% (0.42)	87% (0.05)	-0.03	0.34	-0.14[c]
Male Ever (percent)	11% (0.32)	12% (0.30)	-0.01	0.33	-0.08[c]
Master's degree or higher 2016/17 (percent)	87% (032)	88% (0.32)	-0.01	0.32	-0.05[c]
Years in district 2016/17 (mean)	7.01 (5.09)	6.79 (6.32)	0.22	6.29	0.03[g]
Students taught 2016/17 (mean)	29% (4.88)	27% (17.02)	1.50	16.78	0.09[g]
English learner students 2016/17 (percent)	22% (21.62)	23% (15.75)	-1.22	15.95	-0.08[g]
National School Lunch Program eligible students 2016/17 (percent)	63% (22.81)	62% (23.69)	0.89	23.66	0.04[g]

SD is standard deviation.

Note: Standard deviations are shown parenthesis. Effect sizes represent the Cox index ([c]) for categorical variables and Hedge's G for continuous variables ([g]).

Source: Education Northwest analysis of 2016/17 Oregon Department of Education data.

Table A7. Baseline equivalence in English language proficiency in 2016/17 for secondary teachers after matching

	TEAMS teachers (N = 10)	Comparison (N = 620)	Difference	Pool SD	Effect size
White 2016/17 (percent)	93% (0.32)	95% (0.22)	-0.02	22.0	-0.20[c]
Male Ever (percent)	23% (0.23)	22% (0.22)	0.02	0.22	0.20[c]
Master's degree or higher 2016/17 (percent)	90% (0.32)	89% (0.89)	0.01	0.31	0.04[c]
Years in district 2016/17 (mean)	8.80 (6.52)	8.36 (6.61)	0.44	6.61	0.07[g]
Students taught 2016/17 (mean)	164 (57.79)	160 (73.24)	3.49	73.05	0.05[g]
English learner students 2016/17 (percent)	7% (9.89)	6% (5.74)	1.18	6.43	0.18[g]
National School Lunch Program eligible students 2016/17 (percent)	49% (11.93)	49% (19.42)	0.01	19.34	0.00[g]

SD is standard deviation.

Note: Standard deviations are shown parenthesis. Effect sizes represent the Cox index ([c]) for categorical variables and Hedge's G for continuous variables ([g]).

Source: Education Northwest analysis of 2016/17 Oregon Department of Education data.

Table A8. Baseline equivalence in English language arts in 2017/18 for the full sample of students, including English learner and non-English learner students

	TEAMS students (N = 816)	Comparison (N = 6,771)	Difference	Pooled SD	Effect size
National School Lunch Program eligibility 2017/18 (percent)	42% (0.50)	42% (0.49)	0	0.49	0[c]
Special education eligibility 2017/18 (percent)	6% (0.34)	6% (0.24)	0	0.25	0[c]
English learner student 2017/18 (percent)	4% (0.22)	4% (0.18)	0	0.19	0[c]
Female Ever (percent)	47% (0.50)	49% (0.50)	-0.023	0.50	-0.056[c]
Latinx Ever (percent)	20% (0.41)	20% (0.40)	0	0.40	0[c]
American Indian or Alaska Native Ever (percent)	<1% (0.05)	<1% (0.03)	0.002	0.03	0.660[c]
Asian or Pacific Islander Ever (percent)	4% (0.13)	5% (0.21)	-0.002	0.20	-0.022[c]
Black Ever (percent)	<1% (0.09)	<1% (0.06)	0	0.07	-0.018[c]
Multiracial Ever (percent)	2% (0.18)	2% (0.14)	0	0.15	0[c]
White Ever (percent)	73% (0.44)	73% (0.44)	0	0.44	0[c]
Attendance rate 2017/18 (percent)	94% (5.96)	94% (5.04)	-0.650	5.16	-0.130[g]
English language arts score 2017/18 (SD)	0.22 (0.93)	0.21 (0.95)	0.004	0.95	0.005[g]

SD is standard deviation.

Note: Standard deviations are shown parenthesis. Effect sizes represent the Cox index ([c]) for categorical variables and Hedge's G for continuous variables ([g]).

Source: Education Northwest analysis of 2016/17 Oregon Department of Education data.

Table A9. English language arts regression results from 2018/19 for alternative models

	No covariates (N = 240)	Include student and teacher covariates (N = 240)	Single level with clustered standard errors (N = 240)
TEAMS impact 2018/19 (SD)	0.218 (0.13)	0.342** (0.12)	0.353*** (0.10)
English language arts 2018/19 (SD)		0.513*** (0.08)	0.506*** (0.09)
Special education eligibility 2018/19 (SD)		0.116 (0.38)	0.117 (0.29)
National School Lunch Program eligibility 2018/19 (SD)		-0.064 (0.46)	-0.095 (0.10)
Female Ever (SD)		0.118 (0.08)	0.114 (0.07)
Latinx Ever (SD)		0.892 (0.57)	0.951*** (0.09)
Level 2 on ELPA21 2017/18 (SD)		0.477 (0.33)	0.473* (0.20)
Level 3 on ELPA21 2017/18 (SD)		0.694 (0.51)	0.706 (0.40)
Attendance rate 2017/18 (SD)		0.003 (0.01)	0.003 (0.01)
White teacher 2018/19 (SD)		0.004 (0.16)	
Male teacher 2018/19 (SD)		0.090 (0.12)	
Teacher years in district 2018/19 (SD)		0.000 (0.01)	
Teacher holds a master's degree or higher 2018/19 (SD)		0.049 (0.12)	
Intercept	-0.734*** (0.21)	-2.326* (1.10)	-2.255* (0.96)

	No covariates (N = 240)	Include student and teacher covariates (N = 240)	Single level with clustered standard errors (N = 240)
District fixed effects	✓	✓	✓
CEM Strata	✓	✓	✓

*$p < .05$, ** $p < .01$, *** $p < .001$

ELPA21 is Oregon's English language proficiency assessment. SD is standard deviation.

Note: Standard deviations are shown parenthesis.

Source: Education Northwest analysis of 2017/18 and 2018/19 Oregon Department of Education data.

Table A10. English language proficiency regression results from 2018/19 for alternative models

	ELPA21 reading (N = 296)		ELPA21 writing (N = 296)		ELPA21 speaking (N = 296)		ELPA21 listening (N = 887)	
	No covariates	One level, clustered SE	No covariates	One level, clustered SE	No covariates	One level, clustered SE	No covariates	One level, clustered SE
TEAMS impact 2018/19 (SD)	0.096 (0.09)	0.147 (0.09)	0.051 (0.09)	0.074 (0.08)	-0.052 (0.11)	0.011 (0.11)	0.091 (0.09)	0.110 (0.07)
ELPA21 reading 2017/18 (Z score)	0.323*** (0.09)	0.325*** (0.07)	0.248** (0.08)	0.249** (0.08)	-0.010 (0.09)	-0.014 (0.12)	0.248** (0.08)	0.253*** (0.07)
ELPA21 writing 2017/18 (Z score)	0.363*** (0.09)	0.365*** (0.08)	0.386*** (0.08)	0.388*** (0.07)	0.175 (0.09)	0.180 (0.14)	0.066 (0.08)	0.066 (0.08)
ELPA21 speaking 2017/18 (Z score)	0.036 (0.06)	0.039 (0.07)	0.050 (0.05)	0.057 (0.07)	0.243*** (0.06)	0.231** (0.08)	0.126* (0.06)	0.120 (0.06)
ELA21 listening 2017/18 (Z score)	0.092 (0.08)	0.074 (0.08)	0.058 (0.07)	0.041 (0.07)	0.033 (0.08)	0.036 (0.09)	0.299*** (0.07)	0.293** (0.09)
Special education eligibility 2017/18 (SD)		0.060 (0.48)		0.136 (0.41)		-0.013 (0.39)		0.427 (0.47)
National School Lunch Program eligibility 2017/18 (SD)		0.093 (0.15)		0.077 (0.17)		0.079 (0.14)		0.023 (0.12)
Female Ever (SD)		0.221 (0.55)		0.531 (0.46)		0.479 (0.52)		0.485 (0.57)
Latinx Ever (SD)		-0.717 (0.61)		-0.462 (0.54)		-0.842 (0.56)		-0.904 (0.52)

	ELPA21 reading (N = 296)		ELPA21 writing (N = 296)		ELPA21 speaking (N = 296)		ELPA21 listening (N = 887)	
	No covariates	One level, clustered SE	No covariates	One level, clustered SE	No covariates	One level, clustered SE	No covariates	One level, clustered SE
Attendance rate 2017/18 (SD)		0.011 (0.01)		0.015* (0.01)		0.007 (0.01)		0.015 (0.01)
Constant	0.236 (0.35)	-0.711 (0.95)	0.254 (0.33)	-1.417 (0.93)	0.258 (0.39)	-0.373 (1.05)	0.036 (0.35)	-0.897 (0.80)
District fixed effect	✓	✓	✓	✓	✓	✓	✓	✓
CEM Strata	✓	✓	✓	✓	✓	✓	✓	✓

*$p < .05$, ** $p < .01$, *** $p < .001$

ELPA21 is Oregon's English language proficiency assessment. SD is standard deviation. SE is standard errors.

Note: Standard deviations are shown parenthesis.

Source: Education Northwest analysis of 2017/18 and 2018/19 Oregon Department of Education data.

Table A11. English language proficiency regression results from 2018/19 for elementary and secondary students

	Elementary (N = 174)				Secondary (N = 122)			
	ELPA21 reading	**ELPA21 writing**	**ELPA21 speaking**	**ELPA21 listening**	**ELPA21 reading**	**ELPA21 writing**	**ELPA21 speaking**	**ELPA21 listening**
TEAMS impact 2018/19 (SD)	0.019 (0.16)	-0.001 (0.14)	-0.281 (0.19)	-0.008 (0.14)	0.058 (0.15)	-0.052 (0.14)	-0.014 (0.18)	0.001 (0.14)
ELPA21 reading 2017/18 (Z score)	0.247* (0.11)	0.224* (0.10)	-0.092 (0.10)	0.237* (0.11)	0.541*** (0.13)	0.399** (0.13)	0.315* (0.16)	0.370** (0.13)
ELPA21 writing 2017/18 (Z score)	0.458*** (0.10)	0.473*** (0.09)	0.349*** (0.10)	0.107 (0.10)	0.126 (0.14)	0.182 (0.14)	-0.285 (0.17)	-0.095 (0.14)
ELPA21 speaking 2017/18 (Z score)	0.062 (0.08)	0.078 (0.07)	0.167* (0.08)	0.125 (0.08)	-0.059 (0.08)	-0.025 (0.08)	0.232* (0.10)	0.040 (0.08)
ELPA21 listening 2017/18 (Z score)	0.047 (0.09)	0.054 (0.08)	0.017 (0.09)	0.267** (0.09)	0.139 (0.15)	-0.054 (0.14)	0.107 (0.18)	0.362** (0.14)
Special education eligibility 2017/18 (SD)	0.315 (0.31)	0.208 (0.27)	0.056 (0.30)	0.130 (0.29)	-0.854 (0.46)	-0.620 (0.45)	-0.301 (0.55)	-0.604 (0.44)
National School Lunch Program eligibility 2017/18 (SD)	0.130 (0.17)	0.097 (0.15)	0.107 (0.16)	0.047 (0.16)	1.429* (0.63)	1.103 (0.62)	-0.050 (0.75)	1.026 (0.60)
Female Ever (SD)	0.256 (0.39)	0.492 (0.35)	0.224 (0.41)	-0.035 (0.37)	-0.618 (0.42)	-0.356 (0.41)	0.217 (0.49)	-0.256 (0.40)
Latinx Ever (SD)	0.073 (0.50)	0.470 (0.45)	-0.614 (0.50)	-0.282 (0.48)	-0.595 (0.46)	-0.765 (0.45)	0.021 (0.55)	-0.604 (0.44)

	Elementary (N = 174)				Secondary (N = 122)			
	ELPA21 reading	**ELPA21 writing**	**ELPA21 speaking**	**ELPA21 listening**	**ELPA21 reading**	**ELPA21 writing**	**ELPA21 speaking**	**ELPA21 listening**
Attendance rate 2017/18 (SD)	-0.002 (0.01)	0.001 (0.01)	-0.005 (0.01)	0.004 (0.01)	0.019** (0.01)	0.024*** (0.01)	0.011 (0.01)	0.022** (0.01)
Intercept	-0.347 (1.21)	-0.879 (1.08)	0.984 (1.18)	0.073 (1.16)	-1.935* (0.94)	-1.825* (0.92)	-1.358 (1.12)	-1.568 (0.90)
District fixed effect	✓	✓	✓	✓	✓	✓	✓	✓
CEM Strata	✓	✓	✓	✓	✓	✓	✓	✓

*$p < .05$, ** $p < .01$, *** $p < .001$

ELPA21 is Oregon's English language proficiency assessment. SD is standard deviation.

Note: Standard deviations are shown parenthesis.

Source: Education Northwest analysis of 2017/18 and 2018/19 Oregon Department of Education data.

APPENDIX B. METHODS

This appendix provides more detail on the study methodology, including how we identified a comparison group and how we conducted the analysis.

FINDING A COMPARISON GROUP

To overcome the potential for selection bias, we used a two-step matching procedure to achieve baseline equivalence and ensure that our comparisons were valid and rigorous (see figure 2 in the main report). We first used propensity score matching to match TEAMS teachers to a group of peer teachers (comparison teachers) who shared similar characteristics and appeared likely to enroll in TEAMS. We used coarsened exact matching to match the students of TEAMS teachers (TEAMS students) to a subset of students in the classrooms of the comparison teachers (comparison students) who had very similar demographic characteristics, program enrollment, and academic achievement the year before they were taught by TEAMS teachers.

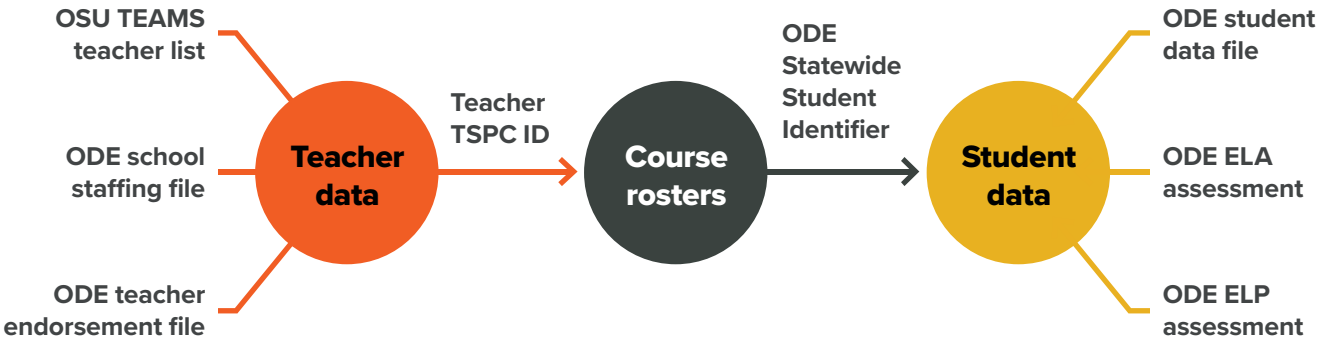
Finally, we measured baseline equivalence for the students, ensuring that the TEAMS students and comparison students were well matched, with no significant observable differences in their personal and demographic characteristics, eligibility for English learner services and special education, and prior academic achievement.

Identifying TEAMS teachers and students

We identified 35 Cohort 1 TEAMS teachers in the Oregon Department of Education administrative dataset based on their Oregon Teacher Standards and Practices Commission (TSPC) account number[1] and verified the link through their names and school of assignment. We then identified their students through course data (figure B1). In the elementary grades this is usually straightforward since most students in grades K–5 have one teacher of record (occasionally two) who teaches most academic subjects and remains with the students most of the school day.

[1] We collected the TSPC account numbers directly from each TEAMS participant or through Oregon State University. Account numbers are also publicly available through the TSPC website: **https://apps.oregon.gov/TSPC/elicense/Search/PublicSearch**

Figure B1. We identified TEAMS teachers in Oregon administrative data and linked them to their students through course rosters



ELA is English language arts. ELP is English language proficiency. ODE is Oregon Department of Education. OSU is Oregon State University. TSPC is Teacher Standards and Practices Commission.

Source: Education Northwest TEAMS evaluation plan.

In the secondary grades (6–12), the connection between teachers and students is more complex. Secondary students are usually taught by multiple teachers in multiple classes and subjects. Not all classes and subjects have the same relationship to learning or assessment performance. We created a series of decision rules to prioritize certain student-teacher matches which we believe are the most related to performance on the English language arts and English language proficiency assessments.

We restricted the sample of secondary students to only include those taking courses from TEAMS or comparison teachers in English language arts (including English language development), math, science, and social studies, as defined by National Center for Education Statistics (NCES) codes. The sampling rules include:

- If students had more than one course with the same teacher in the same subject, we kept the grade-level subject course. For example, we kept Algebra 1 rather than Foundational Math.
- If students were taught by the same teacher in different content areas, we prioritized English language arts, then social studies, and lastly math.
- If multiple teachers were tied to the same student for the same class, we kept the teacher that had a longer tenure in the class.

These rules also avoid duplicated observations, so each student is taught by one TEAMS teacher or one comparison teacher. No student was taught by both TEAMS and comparison teachers. We kept a limited number of elective courses, such as Tutorial and Study Skills (table B1).

Table B1. Examples of included secondary course names and National Center for Education Statistics subjects

	National Center for Education Statistics subject category				
	English language arts	Math	Science	Social sciences	Other
Corrective reading	✓				
Creative writing	✓				
Earth/space science			✓		
English as a second language	✓				
Humanities				✓	
Language arts (grades 6–8)	✓				
Language arts laboratory	✓				
Math (grade 7)		✓			
Prior to secondary education					✓
Reading – General	✓				
Science (grades 6–8)			✓		
Social studies (grades 6–8)				✓	
Social studies – General				✓	
Study skills					✓
Tutorial					✓
Writing (grades 6–8)	✓				

Source: Education Northwest TEAMS evaluation plan.

Identifying comparison teachers with the propensity to join TEAMS

With teacher-to-teacher matching, we can account for important teacher level differences, such as their motivation to teach English learner students as well as their education and experience.

In this study, we used propensity score matching to identify a group of teachers who could serve as the comparison to TEAMS teachers. Propensity score matching identifies individuals who might be more inclined to participate in a treatment or intervention based on certain characteristics. In this project, a propensity score represents the likelihood that a teacher would enroll in TEAMS based on range of covariates that are theoretically linked to program participation and future student outcomes (Murnane & Willett, 2011). For example, a teacher who instructs more English learner students might be motivated to participate in a program that prepares them to better serve English learner students. In fact, most TEAMS teachers shared in focus groups that the primary reason they enrolled in the program was to develop the knowledge and skills to provide effective teaching and support for English learner students. Therefore, we determined that the comparison teachers must have students with similar characteristics to those taught by TEAMS teachers, including the overall percentage of English learners and their standardized test performance.

We identified comparison teachers using a set of characteristics that may influence a teacher's decisions to enroll in TEAMS, including:

- Teacher demographics, including race/ethnicity and gender
- Teacher education level
- Teacher years of experience in the district
- Number of students taught in 2016/17
- Percentage of students who qualify for the National School Lunch Program
- Percentage of students classified as English learners
- Students' mean English language arts and math scores in 2016/17

We generated propensity scores, indicating the likelihood that an individual teacher might enroll, for every TEAMS and non-TEAMS teacher who taught students in 2016/17 (the year before they could have enrolled in TEAMS) and 2018/19 (the outcome year) in participating TEAMS districts. We assigned teachers into blocks based on propensity score and selected comparison teachers whose scores were most similar to TEAMS teachers. In propensity score matching, these overlapping scores are referred to as the "area of common support."

We matched elementary and secondary teachers separately because of their different connections to students. We assigned elementary teachers into three blocks and secondary teachers into four blocks based on the ranges of their propensity scores. The sample for secondary teachers was larger compared

to elementary teachers, allowing for one additional block. Finally, we removed comparison teachers who were outside of the propensity score ranges of TEAMS teachers.

Identifying comparison students who shared academic and demographic characteristics of TEAMS students

Student-to-student matching is one way of establishing baseline equivalence, which is the foundation for a rigorous and valid quasi-experimental design study (What Works Clearinghouse, 2020a). To establish baseline equivalence between TEAMS and comparison students, we identified a sample of students nested in the classrooms of comparison teachers who were, based on observable characteristics in administrative data, statistically similar to the students taught by TEAMS teachers.

We matched TEAMS students to specific comparison students using coarsened exact matching. This method prioritizes reducing differences across all important baseline characteristics and measures by "coarsening" continuous variables into categories that are theoretically sound. For example, we coarsened students' prior performance on state assessments into quartiles. After coarsening variables, a matching algorithm found TEAMS and comparison students that had the exact same values on all matching covariates and placed matched students into strata, or small groups (Iacus et al., 2012).

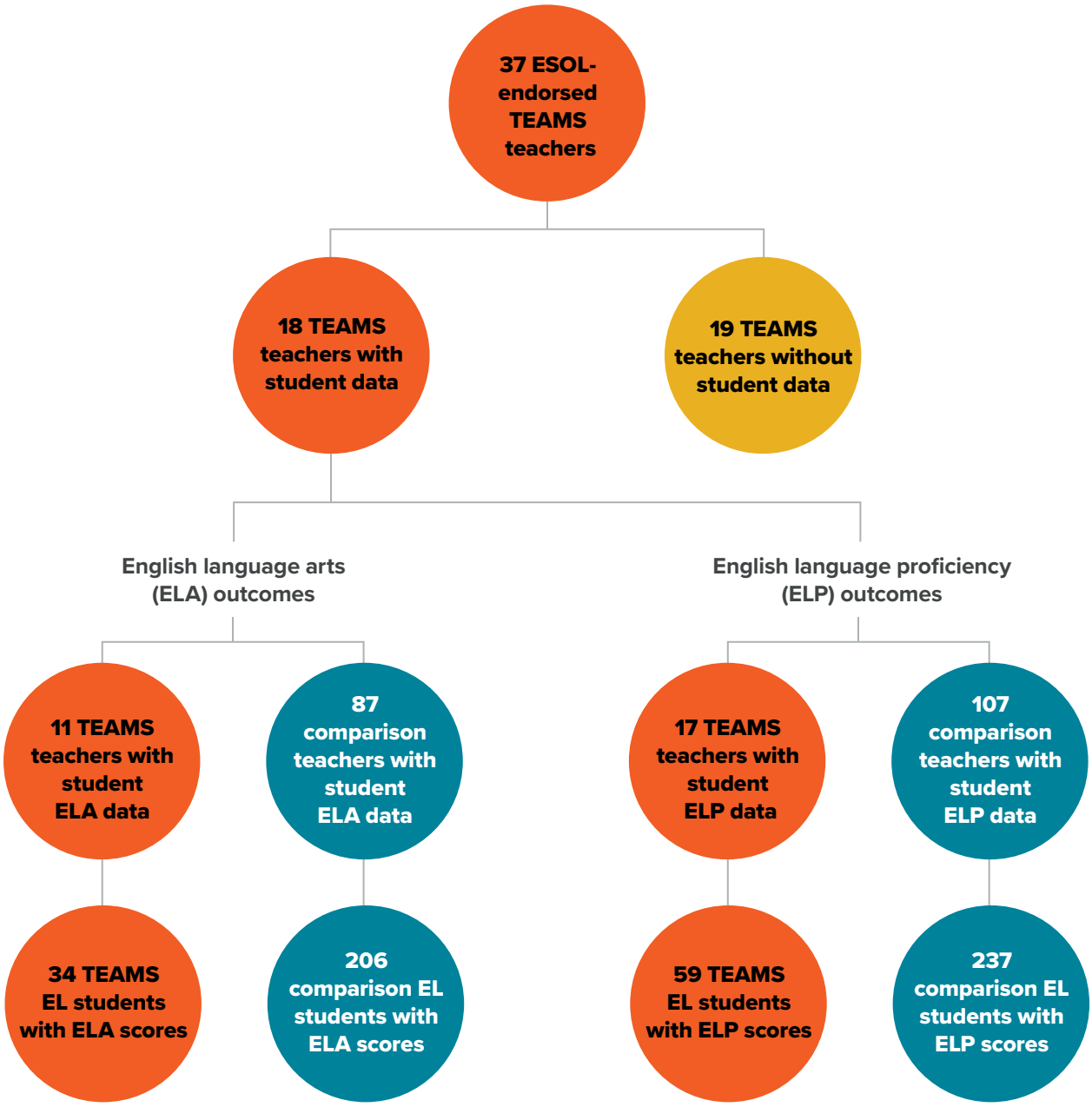
We matched students in classrooms of TEAMS teachers and comparison teachers on key characteristics, including:

- Eligibility for the National School Lunch Program (exact match)
- Eligibility for special education (exact match)
- English learner status in 2017/18 (exact match)
- Student demographics, including race/ethnicity and gender (exact match)
- English language arts assessment score in 2017/18 (coarsened match within quartiles)
- Attendance rate in 2017/18 (coarsened match within quartiles)

These matching and baseline equivalency characteristics are informed by the What Works Clearinghouse (2020b) "WWC Evidence Review Protocol for Interventions for English Learners."

We compared English language arts outcomes for 34 TEAMS English learner students and 206 comparison students. We then compared English language proficiency outcomes for 59 TEAMS English learner students and 237 comparison students (figure B2). For English language arts and English language proficiency assessments, we standardized scores by year and grade using the entire state of Oregon dataset to have a mean of 0 and a standard deviation of 1. Standardizing allowed us to make assessments comparable across years and grades.

Figure B2. The evaluation explores the impact of the TEAMS program by comparing the assessment outcomes of students taught by TEAMS teachers and students taught by similar teachers



Source: Education Northwest analysis of Oregon State University documents (2022), Teacher Standards and Practices Commission records (2022), and Oregon Department of Education administrative data (2016/17–2018/19).

Testing for baseline equivalence

We combined all students into one large dataset and tested for student baseline equivalence for English language arts and English language proficiency analyses in the 2017/18 school year, the year before students were taught by TEAMS or comparison teachers.

Baseline equivalence is met when the measure of difference is less than 0.05 standardized units, as measured by Hedge's G for continuous variables or the Cox index for categorical or dichotomous variables. In other words, the difference between the groups is less than 0.05 standard deviations, which is a negligible difference. Variables that are greater than 0.05 but less than or equal to 0.25 standard deviations still meet baseline equivalence if adjustments are made by including the variable in the final estimation.

We also tested for baseline equivalence between TEAMS and comparison teachers in 2016/17, the year before they could have enrolled in TEAMS. Establishing baseline equivalence of teachers was not necessary for this study since the analysis is conducted at the student level (What Works Clearinghouse, 2020a). However, we believe that teacher matching increased the internal validity of the study.

ESTIMATING THE IMPACT OF TEAMS

To estimate the impact of TEAMS on student assessment outcomes, we used hierarchical linear modeling, a form of regression used to analyze variance and identify difference when subjects are at different hierarchical levels. In our case, TEAMS and comparison students were nested in a classroom with a TEAMS or comparison teacher. Hierarchical linear modeling can account for both student and teacher differences and identify the relationships within and between them. This two-level model controlled for baseline (2017/18) assessment performance, National School Lunch Program eligibility, special education eligibility, gender, race/ethnicity, attendance rate, grade level, and district. We also included a control for teacher match block to account for any remaining differences between teachers. The final model for the English language arts analysis is represented by the following sets of equations:

$$\textbf{Level 1: } Y_{ij} = \beta_{0j} + \beta_{1j}\, ELAPRE_j + \beta_{2j}\, FRPL_j + \beta_{3j}\, SPED_j + \beta_{4j}\, LATINX_j + \beta_{5j}\, GENDER_j + \beta_{6j}\, GENDER_j + \lambda_D + \pi_B + \varepsilon_{ij}$$

$$\textbf{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01}\, \text{TEAMS} + \mu_{0j}$$

$$\beta_{01j} = \gamma_{10}$$

$$\beta_{02j} = \gamma_{20}$$

$$\beta_{03j} = \gamma_{30}$$

$$\beta_{04j} = \gamma_{40}$$

$$\beta_{05j} = \gamma_{50}$$

$$\beta_{06j} = \gamma_{60}$$

The English language arts assessment score during the 2018/19 school year (Y) of student (i) taught by teacher (j) is predicted by a binary variable at the teacher level that indicates if the student was taught by a TEAMS teacher (TEAMS) and a set of student-level covariates. The model included the following student covariates: prior assessment scores, special education eligibility, National School Lunch Program eligibility, gender, whether a student is Latinx, and prior attendance rate. We also included indicators for the student's matching strata block (π) and a district fixed effect (λ). The γ_01 coefficient represents the relationship between TEAMS and the study outcome. The English language proficiency outcome was modeled similarly, but we replaced the prior English language arts score variable with prior English language proficiency scores.

Because teachers participating in TEAMS taught a range of grade levels, we pooled student data across different grades by establishing concordance. This involves standardizing student outcomes, which allows us to compare student scores from different grade levels.

REFERENCES

Iacus, S., King, G., & Porro, G. (2012). Causal inference without balance checking: Coarsened exact matching. *Political Analysis, 20*(1), 1–24.

Murnane, R. J., & Willett, J. B. (2011). *Methods matter: Improving causal inference in educational and social science research*. Oxford University Press.

What Works Clearinghouse. (2020a). *What Works Clearinghouse standards handbook, version 4.1*. National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. **https://ies.ed.gov/ncee/wwc/Docs/referenceresources/WWC-Standards-Handbook-v4-1-508.pdf**

What Works Clearinghouse. (2020b). *WWC evidence review protocol for interventions for English learners, version 4.0*. National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. **https://ies.ed.gov/ncee/wwc/Docs/ReferenceResources/EL_Protocol_v_4_0_Feb2020.pdf**

APPENDIX C.
TEAMS PROGRAM DESCRIPTION

Teachers Educating All Multilingual Students (TEAMS) is a teacher professional development course of study through Oregon State University (OSU) that culminates in English for speakers of other languages (ESOL) endorsement and/or dual language specialization in the state of Oregon. Elements of the TEAMS program include evidence-based online coursework leading to state certification for teaching English learner students; small-group in-person meetings with facilitators to support participants' engagement and success; and partnerships with local community organizations to engage multilingual families.

ONLINE COURSEWORK LEADING TO CERTIFICATION

This evaluation examines the outcomes of students taught by Cohort 1 TEAMS teachers who completed coursework and earned an ESOL endorsement. These teachers passed five online courses offered by OSU and completed an internship in their current classroom (table C1). Each course provided three graduate-level credits.

Table C1. TEAMS coursework for ESOL endorsement

Quarter	Course name and description
Summer 2016	***Racial and Cultural Harmony in the K–12 Classroom*** is an overview of many issues relevant to the increasingly diverse student population in public schools today. It explores how a culturally competent perspective can be incorporated into curriculum design, teaching strategies, and interactions with students and parents. The course is both self-directed and communal, requiring students to respond to the materials and each other at their own pace (ED 522).
Fall 2016	***Foundations of ESOL Education*** examines characteristics of English learners, key theories in language acquisition, the role of culture in language development, and instructional program models for English learner students, while considering implications for classroom instruction (ED 572).

Quarter	Course name and description
Winter 2017	***Linguistics for Teachers*** explores linguistic categories: phonology, morphology, syntax, semantics, pragmatics, and discourse. The course focuses on teaching implications—from psycholinguistic, sociolinguistic, and critical perspectives—for emergent bilingual students in P–12 contexts (ED 579).
Spring 2017	***Instructional Approaches of ESOL Education*** examines the characteristics of standards-based content area instruction for emergent bilinguals. It includes integration of content and language development, classroom-based assessment, and use of technology to support student learning (ED 573).
Summer 2017	***Partnerships and Ideologies in ESOL Education*** considers social and political issues pertaining to educating English learners. The course focuses on exploring multiple ideologies in ESOL and building partnerships across schools, families, and communities (ED 576).
Fall 2017	***Internship*** (ED 510).

Through these courses, TEAMS teaches a variety of evidence-based instructional strategies for working with English learner students (August et al., 2009). These include:

- Providing visuals during instruction, including illustrations of vocabulary concepts
- Use of graphic organizers
- Explicit instruction of general and discipline-specific vocabulary
- Previewing activities to ensure students understand goals and procedures
- Pairing English learners with English proficient students
- Teaching strategies to improve word learning, such as drawing on cognate knowledge

To earn an ESOL endorsement and complete TEAMS, participants also took and passed the ESOL Oregon Educator Licensure Assessment (ORELA).

Facilitated in-person meetings

TEAMS supplements online coursework with face-to-face meetings guided by facilitators to support participating teachers' engagement and success and deepen connections between coursework and initiatives within each district. Facilitators have deep expertise in ESOL and experience coaching and mentoring educators. Meetings occur on site in each partner district. In addition to convening monthly meetings to discuss coursework, facilitators communicate regularly with site and district administrators to deepen connections between coursework and district initiatives.

Partnerships with community organizations

Finally, each district group partners with a local community organization to co-design education-focused community events. This work deepens participants' knowledge and skills in parent, family, and community engagement and develops sustained partnerships between districts and community organizations. These events are codesigned and co-led by TEAMS participants and community partners in each district, exploring the funds of knowledge within the community with oversight from district cluster facilitators.

PUBLICATIONS AND PRESENTATIONS OF TEAMS RESEARCH AS OF OCTOBER 2022

Buxton, C., Ettenauer, B., & McIntosh, K. (2022, August). *Learning lessons from multilingual family engagement during COVID-19* [Paper presentation]. European Research Network About Parents and Education (ERNAPE) 2022 Meeting, Nijmegen, Holland.

Buxton, C., McIntosh, K., & Ettenauer, B. (2022, April). *Teachers learning lessons from multilingual family engagement through the COVID-19 pandemic* [Paper presentation]. 20th International Roundtable on School, Family, and Community Partnerships (INET), San Diego, CA.

Buxton, C., McIntosh, K., Ettenauer, B., & Burho, J. (in press, 2022). Teachers strengthening partnerships with multilingual families during the COVID-19 pandemic. *Kappa Delta Pi Record, 58*.

Ettenauer, B., Buxton, C., & McIntosh, K., (2022, April). *"This is not right!" Teachers telling stories about multilingual family engagement during COVID-19* [Paper presentation]. American Educational Research Association (AERA) 2022 Annual Meeting, San Diego, CA.

Greenberg Motamedi, J., & Burke, A. (2019) *Oregon State University Teachers Educating All Multilingual Students: 2019 annual evaluation report.* Education Northwest.

Greenberg Motamedi, J., & Vazquez Cano, M. (2022) *Oregon State University Teachers Educating All Multilingual Students: Integrating language acquisition and improving outcomes for English learner students.* Education Northwest.

Greenberg Motamedi, J., & Yoon, S. Y. (2020) *Oregon State University Teachers Educating All Multilingual Students: Cohort 1 changes from baseline to practice, 2020 evaluation report.* Education Northwest.

Greenberg Motamedi, J., Yoon, S. Y., & Serrano, D. (in press, 2022) *Oregon State University Teachers Educating All Multilingual Students: Final evaluation report.* Education Northwest.

Mcintosh, K. E., Buxton, C., Burho, J., & Ettenauer, B. (2021, April). *Accepting responsibility for teaching all multilingual students: Community-school partnerships during COVID-19* [Paper presentation]. American Educational Research Association (AERA) 2021 Annual Meeting (virtual).

McIntosh, K., Buxton, C., Hernandez, L., & Vegas, E. (2019, March). *Community-school partnerships in the TEAMS project* [Paper presentation]. Oregon English Learner Alliance 2019 Conference, Eugene, OR.

McIntosh, K., Buxton, C., & Ettenauer, B. (2022, April). *From communication to connection: Multilingual family engagement through the COVID-19 pandemic* [Paper presentation]. Educational Research Association (AERA) 2022 Annual Meeting, San Diego, CA.

Serrano, D., Guven, O., & Greenberg Motamedi, J. (2021). *Change and sustainability during the COVID-19 pandemic: Teachers Educating All Multilingual Students 2021 evaluation report.* Education Northwest.