ANNENBERG
BROWN UNIVERSITY

EdWorkingPaper No. 21-420

Resource for Self-Determination or Perpetuation of Linguistic Imposition: Examining the Impact of English Learner Classification among Alaska Native Students

Ilana M. Umansky
University of Oregon

Manuel Vazquez Cano
University of Oregon

Lorna M. Porter
University of Oregon

Federal law defines eligibility for English learner (EL) classification differently for Indigenous students compared to non-Indigenous students. Indigenous students, unlike non-Indigenous students, are not required to have a non-English home or primary language. A critical question, therefore, is how EL classification impacts Indigenous students' educational outcomes. This study explores this question for Alaska Native students, drawing on data from five Alaska school districts. Using a regression discontinuity design, we find evidence that among students who score near the EL classification threshold in kindergarten, EL classification has a large negative impact on Alaska Native students' academic outcomes, especially in the 3rd and 4th grades. Negative impacts are not found for non-Alaska Native students in the same districts.

VERSION: June 2021

Suggested citation: Umansky, Ilana, Manuel Vazquez Cano, and Lorna Porter. (2021). Resource for Self-Determination or Perpetuation of Linguistic Imposition: Examining the Impact of English Learner Classification among Alaska Native Students. (EdWorkingPaper: 21-420). Retrieved from Annenberg Institute at Brown University: https://doi.org/10.26300/mym3-1t98

Resource for Self-Determination or Perpetuation of Linguistic Imposition:

Examining the Impact of English Learner Classification among Alaska Native Students*

Ilana M. Umansky

Manuel Vazquez Cano

Lorna M. Porter

* As authors, we'd like to extend our gratitude and appreciation for meaningful discussion and feedback which shaped the intent, design, analysis, and writing of this study. Acknowledgement and thanks go to Ashley Pierson, Michelle Hodara, Mandy Smoker-Broaddus, Teresa McCarty, Bryan Brayboy, Elijah Moreno, Robert Linquanti, and Gary Cook.

Abstract

Federal law defines eligibility for English learner (EL) classification differently for Indigenous students compared to non-Indigenous students. Indigenous students, unlike non-Indigenous students, are not required to have a non-English home or primary language. A critical question, therefore, is how EL classification impacts Indigenous students' educational outcomes. This study explores this question for Alaska Native students, drawing on data from five Alaska school districts. Using a regression discontinuity design, we find evidence that among students who score near the EL classification threshold in kindergarten, EL classification has a large negative impact on Alaska Native students' academic outcomes, especially in the 3rd and 4th grades. Negative impacts are not found for non-Alaska Native students in the same districts.

Key words: Alaska Native students; English learner classification; Regression discontinuity

The federal Every Student Succeeds Act (2015) defines English learner (EL) eligibility differently for Indigenous[1] students than for non-Indigenous students. Whereas non-Indigenous students must have a primary language other than English, Indigenous students are eligible if a language other than English has had a "significant impact" on their English development (Every Student Succeeds Act [ESSA], 2015 § 8101(20)). Concurrently, and tightly linked to a history of education and social policy aimed at the destruction of Indigenous languages and cultures (Spring, 2016), most Indigenous students speak English as their primary or sole language (Siebens & Julian, 2011). As such, the characteristics and linguistic profiles of Indigenous EL-classified students are typically very different than those of non-Indigenous EL students (Carjuzaa & Ruff, 2016). This creates an important context in which to understand the effects of EL classification and service provision.

EL classification is operationalized and experienced in varied ways for different groups of students and, as a result, may have differential impacts. Research identifies key differences by racial and ethnic group (Flores et al., 2020; Ochoa, 2013; Author & others, 2020) as well as for U.S.-born students compared to those who have immigrated to the U.S. (Valenzuela, 1999). However, research on experiences with, and effects of, EL classification has focused almost exclusively on first- and second-generation immigrant students. American Indian, Native Hawaiian, and Alaska Native EL students are important, but often overlooked EL-classified student groups (Carjuzaa & Ruff, 2016; Villegas, 2020). For numerous reasons explored below, including unique social-political and education histories, connections to land, and linguistic profiles, EL classification and services may be experienced differently by and may have different impacts on Indigenous students.

Indigenous students are a widely diverse group of students from different regions with

varying heritage languages, cultures, and histories. This study focuses on Alaska Native students, who themselves come from 229 federally recognized tribes (Bureau of Indian Affairs, 2019) and who speak roughly 20 Alaska Native languages (Alaska Stat. § 44.12.310) from four major language families: Aleut, Tsimshianic, Haida, and Athabancan-Eyak-Tlingit (Krauss, 2007). Roughly a quarter of Alaska Native students are classified as ELs when they enter school (Authors & others, 2021).

While diverse, the shared history of educational imposition and forced linguistic and cultural assimilation among Indigenous students across the U.S. adds a weighty and concerning layer to a student classification – English learner – that is defined by a focus on English development rather than heritage language proficiency and revitalization (Villegas, 2020). Yet English learner classification is tied to resources that may support needed programs, materials, and staffing for Indigenous students who are disproportionately likely to attend under-funded schools (National Indian Education Association, n.d.). As such, while there is reason to believe that EL classification may, on average, operate differently for, and be experienced differently by, Alaska Native students compared to non-Alaska Native students, it is not clear whether or for what outcomes EL classification may benefit or harm Alaska Native students.

This study draws on student-level longitudinal administrative data from five Alaska school districts and a regression discontinuity design to answer two questions:

1. What is the impact of English learner classification in kindergarten on standardized math and English language arts (ELA) assessment performance (3rd-5th grade), and on special education identification and school attendance (kindergarten-5th grade) among Alaska Native students in select school districts in Alaska?
2. How, if at all, do these impacts differ from those of non-Alaska Native English learner

students in the same districts?

In the sections that follow, we synthesize existing literature on the intersection of Indigenous education and EL policy, provide a theoretical framework around why EL identification might help or harm Alaska Native student outcomes, and present this study's methods and findings. We conclude with a discussion that includes implications of our findings for policy and practice. This study fills gaps in understanding how EL classification and services impact Alaska Native and other Indigenous students, as well as how different groups of students may be differentially impacted by EL classification and services.

Literature Review

Alaska Native and other Indigenous ELs experience EL classification within a broader context shaped by the influence of other U.S. policies and practices. Historically, these policies were based on forced cultural and linguistic assimilation including the intentional stripping of heritage language use, although recent Indigenous-led efforts have resulted in practices and policies that support Indigenous heritage language revitalization and self-determination (Ayuluk et al., 2015; Siekmann et al., 2017).

Early U.S. Indigenous education policy was centered on a militaristic boarding school model, which often isolated students from their families and communities, suppressed heritage language use, and engaged in racist instruction and policing of student behavior (Barnhardt, 2001; Hirshberg, 2008; Jester, 2002; Leap, 2012). The boarding school model lasted into the 1970s in Alaska and the legacy reverberates through Indigenous communities today (Hirshberg, 2008). Standard American English[2] is privileged at the loss of heritage languages and policy decisions continue to devalue Indigenous knowledges and cultures (Brayboy & Lomawaima, 2018; Jester, 2002).

However, some federal and state policies focus on Indigenous self-determination in education, including language revitalization. The Indian Education Act (1972) and the Indian Self-Determination and Educational Assistance Act (1975) led to an emergence of schools overseen by Indigenous communities (Lomawaima & McCarty, 2006). The Native American Languages Act (1990) and Native American and Alaska Native Children in School Program (2002) focus on Indigenous languages and cultural instruction in schools. Specific to Alaska, there is the Alaska Native Educational Equity, Support, and Assistance Act (2002) which provides funds to support educational programs and services focused on Alaska Native education, and the state has adopted Alaska Standards for Culturally-Responsive Schools (Alaska Native Knowledge Network, 1998).

While certain policies espouse support for Indigenous languages and self-determination, these policies, in intersection with others, may still result in inequitable outcomes for Indigenous students and barriers to heritage language development and culturally responsive instruction (Beaulieu, 2008; Jester, 2002; Jester & Fickel, 2013; Lomawaima & McCarty, 2006; Patrick, 2008; Winstead et al., 2008; Wyman et al., 2010a). Standards and accountability policies create an environment where even schools overseen by Indigenous communities "...face the dilemma of 'doing' Indigenous education while complying with high-stakes tests that devalue local knowledge" (Lomawaima & McCarty, 2002, p. 298). Curricula omit Indigenous histories and rely on stereotypes and White-centric perspectives (Quijada Cerecer, 2013). Non-Indigenous teachers at times employ a deficit-oriented lens when engaging with Indigenous communities (Jester, 2002; Jester & Fickel, 2013; Lomawaima & McCarty, 2006; Quijada Cerecer, 2013). Standardization of instruction and assessment is generally misaligned with Indigenous knowledges and orientation to schooling (Nelson-Barber & Trumbull, 2015; Reyhner & Hurtado, 2008), failing to recognize and respond to many Indigenous communities' connection to land, community, history, language, and

culture (Barnhardt & Kawagley, 2005; Dinero, 2004). Required content and standards push out culturally sustaining and place-based curricula (Siekmann et al., 2017).

In contrast with assimilative education policies and practices, culturally responsive and sustaining education policies and practices are responsive to students' identities and integrate cultural elements into instruction to create authentic, relatable learning experiences (Brayboy & Castagno, 2009; McCarty & Lee, 2014). While large-scale and causal evidence is needed, culturally responsive and sustaining education practices and policies are positively correlated with Indigenous students' outcomes (Castagno & Brayboy, 2008). In Alaska specifically, integrating instruction on cultural traditions, elders' knowledge, and applications of Alaska Native constructs to core content learning, such as star navigation to support math learning, can engage and support Alaska Native students (Ayuluk et al., 2015; Barnhardt & Kawagley, 2005; Hogan, 2008; Jester & Fickel, 2013; Lipka & Adams, 2004; Siekmann et al., 2017).

Indigenous Languages and English Use in the United States

There has been tremendous language loss for U.S. Indigenous communities, due in large part to the legacy of assimilationist policies and practices (McCarty, 2003). Heritage language loss, preservation, and revitalization look different across communities; many languages are no longer spoken, while others are spoken only by elders. Youth may grow up speaking the heritage language, hearing the heritage language spoken in their household, or learning their heritage language in school (McCarty et al., 2006). There are twenty Alaskan languages, but only four are estimated to have more than 100 highly proficient speakers in Alaska (Alaska Native Language Preservation & Advisory Council, n.d.). Only two Alaska Native languages are learned by youth as their first language, both in the most prevalent heritage language family in Alaska, Yupik[3] (Alaska Native Language Center, n.d.; Krauss, 2007).

There are strong, Indigenous-led, efforts across the U.S. to preserve and revitalize heritage languages. Heritage language programs[4] are positively associated with Indigenous students' linguistic and academic growth, as well as engagement, intergenerational communication, sense of identity, and connection to community (Apthorp et al., 2002; Arviso & Holm, 2001; August et al., 2006; Lomawaima & McCarty, 2002; Smallwood et al., 2009). As of 2018, there were at least six districts in Alaska that offered Alaska Native heritage language programs or bilingual programs, including Yupik and Inupiaq languages (Authors & others, 2021). Research on Alaskan Yupik programs suggests that they have strong support from community members and families, but face challenges through standardized education policy implementation and rapid language shift to English among youth (Williams & Rearden, 2006; Wyman et al., 2010a; Wyman et al., 2010b).

Many Indigenous students speak English as their primary language (Carjuzaa & Ruff, 2016). However, this English variety may differ from Standard American English, the variety of English privileged and assessed in U.S. education settings (Carjuzaa & Ruff, 2016; Leap, 2012; Wiley & Lukes, 1996). The English variety spoken may be influenced by an Indigenous language, whether the language is still spoken in the household or was spoken by prior generations (Leap, 2012). Given the diversity of Indigenous languages and communities, these varieties of English and their origins vary (Wong Fillmore, 1996). As an example, however, "a" and "the" do not have translations in Athabaskan–a family of Indigenous languages spoken in Alaska. As a variety of English developed in communities where Athabaskan was spoken, it included patterns of omitting or adapting these articles in ways that vary from Standard American English, patterns that may now be present in households whether Athabaskan is still spoken or not (Thompson, 1984). The varieties of English spoken by Indigenous students are whole, valid English varieties, not markers of language deficiency (Devereaux & Palmer, 2019; Leap, 2012). Yet many of these students are

classified as ELs through assessments that measure proficiency in Standard American English.

English Learner Policy and Its Impacts on Students

EL policy stems from the intent to ensure that students are not foreclosed from equitable access to schooling because of a lack of English proficiency (Hakuta, 2020). EL policy includes three main areas: (1) identifying and classifying eligible students, (2) providing educational supports, and (3) reclassifying students out of EL status once evaluated to have reached English proficiency (ESSA, 2015). Decisions regarding the processes and assessments used to determine identification, classification, and exit are largely left to the state, and service provision decisions are often left to the district or school, resulting in policies and practices that vary across the U.S. (Linquanti & Cook, 2013).

Initial EL identification typically begins with a home language survey, where guardians answer questions about a student's language background and certain responses elicit screening for EL classification. Screening involves the administration of a state-determined English proficiency assessment; a student will be classified as EL if they score under a set proficiency threshold (Bailey & Kelly, 2013). EL classification sets in motion a set of largely locally-determined programmatic and monitoring interventions. These interventions, by law, are designed to support the linguistic and academic needs of students acquiring English and typically include English language development instruction, modified core content instruction, and annual assessment to evaluate English proficiency growth and eligibility for exit from EL status (ESSA, 2015).

Because EL classification impacts the services a school must provide, it is important to understand whether and how EL classification impacts students' educational opportunities and outcomes. Research on these questions has shown divergent effects. For example, Shin (2018) found that EL classification resulted in higher standardized math and ELA scores among students

who entered kindergarten near the EL threshold, effects that were consistent in elementary grades and positive, yet less precise, in secondary grades. In contrast, author (2016) found that EL classification had a negative effect on students' standardized math and ELA scores in grades two through ten. Findings of divergent effects should not be surprising, as the design and implementation of services vary, and EL students have widely varying skills, backgrounds, and educational needs.

The diversity of EL-classified students is masked by a federally mandated policy system which clusters all students into a solitary high-stakes category. Research is beginning to unpack how EL classification impacts different students differently, with evidence that EL classification is more beneficial to students with lower English proficiency levels (Callahan et al., 2010) as well as for students in schools with larger EL-classified populations (Callahan et al., 2008) and for those in bilingual programs (Author, 2016). There is also evidence that students born outside of the U.S. benefit more from EL classification than those born in the U.S. (Callahan et al., 2010). In addition, EL classification may have divergent effects on different outcomes, such as academic achievement (Cimpian et al., 2017), non-cognitive outcomes such as self-efficacy (Chin, 2020; Lee & Soland, 2020), graduation (Carlson & Knowles, 2016; Johnson, 2019), and opportunity to learn (Robinson, 2011).

Other outcomes are, as yet, understudied. For example, there is clear evidence of English learner disproportionality in special education (Sullivan, 2011) yet researchers are only beginning to examine the impact of EL classification on special education identification. Murphy and Johnson (2020) found either null, or weak negative effects of initial EL classification on special education identification in grades one through six, with stronger negative findings for Spanish-speaking ELs in comparison with other home languages. Similarly, there is early evidence that EL

classification impacts students' sense of self-efficacy (Lee & Soland, 2020), but it is, as yet, unstudied how this might impact downstream outcomes like school attendance. Qualitative work suggests that ELs are more likely than non-ELs to face academic, socioeconomic, and social challenges that are correlated with chronic absenteeism (George, 2019), yet the effect of EL classification on attendance is unstudied quantitatively.

Indigenous Students and EL Policy

EL policy is typically perceived to be designed for students who speak a language other than English as a primary language (Carjuzaa & Ruff, 2016). The federal definition of a potential EL is differentiated for three groups of students, however: immigrant-origin students, migrant students, and students who are "Native American or Alaska Native, or a native resident of the outlying areas" (ESSA, 2015, § 8101(20)). Only the first two groups of students are eligible based on having a primary language other than English. The third category of students, i.e. Indigenous students, by contrast, are eligible for EL identification if they come "from an environment where a language other than English has had a significant impact on the individual's level of English language proficiency" (ESSA, 2015, § 8101(20)). While we could not find direct evidence of the origin of this differentiated definition for Indigenous students, it appears to be in response to the history described above. In other words, it appears to be rooted in a recognition that many Indigenous students would be speakers of non-English langauges were it not for a history of forced linguistic and cultural assimilation (Crawford, 1997). Although "significant impact" has not been defined in federal legislation or guidance, this definition indicates that Indigenous students can have English as their primary language and still be eligible for EL identification if they meet other state EL identification criteria (Regional Education Laboratory Northwest, 2019).

This, coupled with the high proportion (80-90%) of Indigenous students who speak English

as their sole home language (Siebens & Julian, 2011), suggests that Indigenous ELs' linguistic profiles are likely different from those of non-Indigenous ELs. Unfortunately, because EL research has centered on immigrant-origin students (Carjuzaa & Ruff, 2016), it is difficult – and in some states impossible – to determine the proportion of Indigenous EL-classified students who speak English versus a heritage language. This is because in many states, the home language survey fails to capture the complexities of language use, focusing on one primary language rather than recognizing the possibility of students' use and exposure to multiple home and heritage languages (Bailey & Kelly, 2013). In other cases, based on the centering of non-Indigenous EL policy, states do not allow English as the primary language of record for EL-classified students. This is the case in Alaska, the implications of which are discussed below.

For Indigenous EL students who speak a variety of English other than Standard American English, the primary goal of English language instruction is likely focused on learning Standard American English in school, while for other EL-classified students the goal is to learn English as a new language. Given these different linguistic goals, there is likely a need for differentiation in the supports provided through EL classification for those acquiring English as an additional language compared to those who speak an English variety and are acquiring Standard American English (Devereaux & Palmer, 2019; Smith, 2016). Little is known about how, if at all, education agencies, both at the state and district levels, differentiate EL services for Indigenous students generally, or Indigenous English-dominant students specifically (Villegas, 2020).

Theoretical Orientation

Given what is known regarding Indigenous education and what is known regarding EL practices, there are reasons to theorize that EL supports could act either as a support *or* as a barrier for EL-classified students' academic, special education identification, and attendance outcomes.

In this section, we build from our literature review to outline mechanisms through which EL classification may benefit or harm Alaska Native student outcomes.

EL services may support Indigenous students through the provision of resources focused on Indigenous languages and cultures, including heritage language and bilingual programs, which, as described above, are positively associated with an array of outcomes and protective factors (Brayboy & Castagno, 2008; Smallwood et al., 2009). A review of Alaska district EL service plans found evidence that some EL services were specifically focused on Alaska Native language and culture, including heritage language programs, community engagement, and culturally sustaining instruction (Authors & others, 2021). EL services may also support Indigenous students by providing instruction in Standard American English. In a study on American Indian EL-classified students, Bilagody (2014) found that both teachers and parents expressed support for instruction in Standard American English, seeing it as beneficial for students' academic progress. While not focused on Indigenous students, Pearson et al. (2013) found evidence that services designed to support the acquisition of Standard American English had beneficial academic outcomes for students identified as speakers of African American Vernacular English.

There are also reasons why EL classification might function as a barrier for Indigenous students. EL classification may exacerbate a deficit-oriented framing of Indigenous students, identifying students by a lack of linguistic proficiency (Garcia, 2009) rather than their multilingual assets (Callahan & Gándara, 2014). EL classification may be experienced in stigmatizing ways by Indigenous, English-speaking students in that the classification implies that a student is not a speaker of any English variety, failing to recognize these students' proficiency in whole and complete English varieties (Ahler, 2007; McCarty et al., 2009). This may exacerbate trends of internalization of language shame, which can be experienced by Indigenous students who have

received harmful messaging that their heritage language is a symbol of lower status through their educational and social experiences (Lee, 2007; McCarty et al., 2009; Romero-Little et al., 2007). In addition, EL classification has been shown to limit access to core content (Estrada, 2014; Kanno & Kangas, 2014; Thompson, 2017b), as well as the provision of needed services, such as special education supports (Murphy & Johnson, 2020; Authors & others, 2017). Finally, EL classification may negatively impact Indigenous students through accountability pressures focused on English language acquisition at the expense of heritage language development (Ahler, 2007; Wyman et al., 2010b) or culturally relevant curriculum (Siekmann et al., 2017).

Whether EL classification and services are beneficial or harmful for Indigenous students likely depends on how services and policies are designed and implemented (Cimpian et al., 2017; Hopkins et al., 2015). Specifically, research on Indigenous education identifies the importance of sovereignty and self-determination in education (Brayboy & Lomawaima, 2018; Deyhle & Swisher, 1997), community and family involvement, and culturally responsive education policies and practices (Ayuluk et al. 2015; McCarty & Lee, 2014; Romero-Little, 2010; Sabzalian, 2019).

Alaska Context and EL Identification Policy

With tremendous cultural and linguistic diversity (Barnhardt, 2001), Alaska has the largest area of any U.S. state, but also the lowest population density (United States Census Bureau, 2020). Sixteen percent of Alaska's roughly 750,000 residents, and 22% of the state's 150,000 K-12 population identify as American Indian/Alaska Native, the largest proportions of any U.S. state (Alaska Department of Education and Early Development [DEED], n.d.; U.S. Department of Education, 2019). Alaska is also unique in that many residents engage in subsistence economies (Alaska National Interest Lands Conservation Act, 1980; Wheeler & Thornton, 2005), and 20% of Alaska's K-12 students attend rural schools, half of which are in communities inaccessible by road

systems (Author & others, 2019). In Alaska, in 2019, 12% of the state's K-12 students were EL-classified, and of those, 41% were American Indian or Alaska Native, far higher than the 8% of ELs nationally who are American Indian/Alaska Native (Office of English Language Acquisition, 2020). With a quarter of Alaska Native kindergartners classified as ELs (Authors & others, 2021), Yupik is the most common language family spoken by EL students (Snyder et al., 2019).

Both American Indian/Alaska Native students and EL-classified students face lower rates of high school completion and lower standardized academic assessment scores in relation to non-Indigenous and non-EL peers in Alaska (DEED, 2018). Only 11% of Alaska Native ELs are reclassified by 7th grade, a much lower percentage than similar analyses looking at predominantly non-Indigenous students (Slama, 2014; Thompson, 2017a; Authors & others, 2021).

At the time of our study, EL identification in Alaska consisted of two primary steps. First, guardians of students entering a school district completed a home language survey asking about students' language practices and contexts. Students who were identified as having a primary language other than English were then administered an English proficiency screener assessment. Students who scored below the state's threshold were classified as EL (DEED, 2020). Alaska's EL identification policy, likely because of its large Alaska Native population and the differentiated federal rules for EL eligibility for this population, also had an alternative identification process. The alternative process allowed teachers or administrators to identify and screen students who they believed to be potential ELs but who did not identify a language other than English on their home language survey. Specifically, educators could use a state-developed language observation checklist which asked a set of questions about how a given student's English language practices "compared to Standard English-speaking students of the same age" (DEED, 2020). Students identified as potential ELs through this checklist were then administered the screener assessment.

Data and Method

This study was carried out together with another mixed-methods, practitioner-oriented study conducted in partnership with DEED and a group of Alaska school districts (Authors & others, 2021).[5] The data across the two studies included statewide longitudinal student-level data matched with data from five Alaska school districts. Data also included interviews with EL and Alaska Native education leaders and district EL program plans. In the present study we only utilize the quantitative data, but our research questions, methods, and framing are shaped by the full data.

Sample

The study sample consists of all kindergarten-entrant students who took the EL screener assessment across five Alaska school districts over the years 2011/12 to 2018/19 (N=2,653). This sample represents the universe of kindergarten-entrant potential EL-classified students in the five districts over these years. These students could have been identified as potential ELs either through the home language survey or through the teacher language observation checklist. The sample represents 19% of the statewide population of EL-classified students who entered kindergarten between 2011/12 to 2018/19 and 42% of all Alaska Native EL-classified students who entered kindergarten during this same time period. We derived two different analytic samples – the first for academic outcome analyses (grades 3-5; 1,563 unique students) and the second for non-academic outcome analyses (grades K-5; 2,653 unique students). In all, the study sample consisted of eight separate cohorts. Tables A and B in online appendix B illustrate the cohorts in each sample.

The five districts represented in the analytic sample varied in size, urbanicity, and student composition (see Table C in appendix B). Two of the districts served fewer than 5,000 students, two served between 5,000 to 10,000 students, and one served more than 10,000 students. The two smallest districts, Districts 4 and 5, were the most remote and had the largest concentrations of

Alaska Native and EL-classified students. In both districts, more than 75% of enrolled students were Alaska Native. The percentage of EL-classified students in District 4 was between 51 to 75% while the percentage ranged between 25 to 50% in District 5 (percentages are binned to protect district anonymity). The three larger districts had lower proportions of Alaska Native and EL-classified students, although District 2 had a larger proportion of Alaska Native students (11-20%) compared to the other two (<= 10%).

Table 1 and Table D in online appendix B describe the analytic samples for the academic, and non-academic, outcomes, respectively. In the academic sample (Table 1), 84% of students were Alaska Native, 92% ever qualified for free or reduced-priced lunch (FRPL), and 92% of students were EL-classified. Among potential EL-classified students, there were notable differences between students identified as EL and those who passed the screener and were, therefore, identified as initially fluent in English. There were also important differences between Alaska Native and non-Alaska Native students. Most notably, a higher proportion of EL-classified compared to non-EL classified, and Alaska Native compared to non-Alaska Native students, qualified for FRPL and had lower mean scores across multiple measures on Alaska's kindergarten readiness assessment, the Alaska Development Profile (ADP).

Treatment Variable

In Alaska, school districts could select from two English proficiency screener assessments developed by the WIDA Consortium to screen newly enrolled kindergarten students: the WIDA Access Placement Test (W-APT) or the Measure of Developing English Language (MODEL) assessment. Three districts in our sample used the W-APT assessment exclusively, one district used the MODEL assessment, and one used both assessments (Table A in appendix B). Upon entry into school, students who were potentially eligible for EL services were assessed in the speaking

and listening domains on one of these assessments. The student was then assigned a composite oral proficiency score. The W-APT oral composite score ranges from 0 to 30 and the MODEL oral composite score from 1.0 to 6.0. Students who earned a score below 29 on the W-APT or below a 6.0 on the MODEL assessment were to be classified as EL (DEED, 2020).[6] The study treatment variable is a binary variable equal to 1 if the student scored at or below the EL threshold and should, therefore, have been identified as EL, and 0 if the student scored above the EL threshold. Compliance with EL classification policy was very high, with 97% of students assigned to the appropriate language status based on their oral composite score (Figure A in online appendix B).

Moderator Variable

In our first research question we were interested in the effect of EL classification for Alaska Native students only. In the second research question we were interested in how EL classification effects differed for Alaska Native compared to non-Alaska Native students. The therefore used a moderator variable that indicated whether a given student was ever identified as Alaska Native while observed in the data. We used ever Alaska Native rather than always Alaska Native because inconsistent practices in collecting and reporting race and ethnicity data have been shown to undercount American Indian and Alaska Native students (Ault & John, 2017). We may still have undercounted Alaska Native students, however, given that some students may have consistently selected another racial category, such as the multiracial category (Liebler, 2010; Sandefur & McKinnell, 1986).

Outcome Variables

In this study, we explore the impact of EL classification on a set of academic and non-academic outcomes. The academic outcomes, ELA and math achievement, are our primary outcomes of interest, and are measured using scores on the statewide Performance Evaluation for

Alaska's Schools (PEAKS) assessment[7], adopted by DEED in the 2016-17 school year. PEAKS assessment scores are standardized by grade and year using the full statewide dataset. We pool cohorts and look at test score outcomes in 3rd through 5th grade. Third grade is the first instance of PEAKS administration and sample sizes are too small for meaningful results after the 5th grade. Our non-academic outcomes include attendance rates and special education identification, both of which we examine in grades K-5. Attendance is measured as the percentage of days a student attended school in a given year. Special education identification is a binary variable indicating if a student was identified as having a disability and placed on an individualized education plan.

Analytic Strategy

Our main analytic approach used a regression discontinuity (RD) design to estimate the effect of EL classification on our set of outcome variables. When appropriate assumptions are met, RD has been shown to provide robust causal estimates that replicate findings from experimental data (Cook et al., 2008; Imbens & Lemieux, 2008; Murnane & Willett, 2010). Generally, it is difficult to identify the impact of an intervention because those who receive the treatment (in our case EL classification) are systematically different from those who do not. RD can overcome this non-random selection problem when treatment is assigned based on a set threshold on a continuous pretreatment covariate. The premise is that there is essentially random assignment of students into the EL group among those who score close to the screener threshold (Robinson, 2011; Shin, 2018).

We use students' oral composite scores as our running variable that predicts EL or non-EL classification. To have the W-APT and MODEL scores on a common scale, we centered each assessment at the relevant cut-score and standardized the resulting screener assessment scores. The main model for question one, which drew exclusively on the Alaska Native student sample, is:

$$(1) \qquad Y_{ij} = \beta_0 + \beta_1 SCREEN_i + \beta_2 BELOW_i + \boldsymbol{\gamma_X X_i} + \boldsymbol{\delta_C COHORT_i} + \boldsymbol{\Pi_D DISTRICT_i} + \delta_i$$

where Y represents student *i*'s outcome in year *j*, *SCREEN* is a continuous running variable that represents student *i*'s standardized screener score; *BELOW* represents our dichotomous treatment variable; and $\boldsymbol{X}$ represents a vector of student and school level covariates. At the student level, we included gender, kindergarten readiness scores, migrant status, and whether ever eligible for FRPL or special education identification (this last covariate was omitted in the models with special education identification as the outcome). At the school level, we included the proportion of the school that was classified as EL, the proportion of the school that was American Indian/Alaska Native, and a set of dummy variables representing the relative urbanicity or rurality of the student's kindergarten school location (Author & others, 2019). We also included cohort and district fixed effects. Our outcomes, *Y*, included standardized math and ELA scores in grades 3 through 5, and attendance and annual special education identification in kindergarten through 5th grade. We cluster standard errors by screener score to account for the variable's discrete nature.

We arrived at this final model by testing model fit. Covariates were identified based on theory and their inclusion tested. The final model had a linear slope and no differentiation of slope above and below the cut-score. This specification was arrived at through observation of the data and comparison of model fit (Akiake information criterion; AIC). The coefficient of interest is β_2, which represents the impact of EL classification on student achievement, special education identification, or attendance among potential ELs who scored near the EL threshold. We conducted a set of robustness checks to test for the sensitivity of our findings to our analytic approach and model specifications. These robustness checks are described below and in appendix A.

Data for an RD design should, under ideal conditions, have a minimum of four data points above and below the cut-score (What Works Clearinghouse, 2020). The more data on each side, the more likely it is to be able to accurately model functional form. In this setting, while there were

abundant datapoints below the EL threshold, Alaska EL policy set the threshold for EL classification at (MODEL) or just below (W-APT) the highest possible score on the screener. As a result, once standardized and centered, we had only two data points at or above the threshold. This is a limitation of this study which we attempt to address through various robustness checks.

For research question two, we conduct a difference-in-regression discontinuity analysis, using the full sample of both Alaska Native and non-Alaska Native students. The model is the same, except that we included an indicator variable for whether a student was non-Alaska Native, and we added two interactions to the model: one that interacted the non-Alaska Native indicator variable with the running screener score variable (*SCREEN*) to allow for the relationship of screener score with academic achievement to vary for Alaska Native and non-Alaska Native students; and a second that interacted the non-Alaska Native indicator variable with the indicator variable of whether a student scored at or below the EL threshold (*BELOW*). The coefficient on this second variable is the parameter of interest, representing the difference in the effect of EL classification for non-Alaska Native students compared to Alaska Native students. The direction, magnitude, and significance of this coefficient answers our research question about whether EL classification impacts Alaska Native students differently than non-Alaska Native students. Of note, the sample of non-Alaska Native students who took the screener assessment in the five districts was a small fraction of the Alaska Native student sample. In 3rd grade, for example, when students first took the state math and ELA assessments, there were only 256 non-Alaska Native students in the sample compared to 1,332 Alaska Native students. As such, our statistical power to detect differences between the groups is limited and we describe patterns in the results beyond those with statistical significance.

For all models, we calculated the optimal bandwidth using the Imbens and Kalyanaraman

method (Imbens & Kalyanaraman, 2012; Nichols, 2011) and ran models for a range of eleven bandwidths from one to two standard deviations around the cut-score threshold at 0.1 intervals. We present and describe results from these multiple bandwidths but focus our discussion at 1.5 as this is close to the optimal bandwidth across grade levels and subject areas. Because compliance with EL identification was high (97%), we do not adjust the model coefficient estimates to account for students not being assigned to the appropriate language classification. As always, a limitation of regression discontinuity is that it provides robust causal estimates of the impact of the intervention for individuals who score near the intervention assignment threshold, but not necessarily for those well above or below the threshold. In our case this means that our estimates reflect the impact of EL identification for students near the EL cut-score—those with relatively advanced oral proficiency in Standard American English upon entry into kindergarten.

Assumption Checks

In order for the RD design to demonstrate internal validity, there are key assumptions that must be met (Murnane & Willett, 2010). First, the forcing variable must reliably sort students into treatment and control groups. As reported above, 97% of students were correctly classified as EL or non-EL (Figure A in online appendix B). Specifically, 98% of students who scored below the screener threshold were classified as EL and 78% of students who scored above the threshold were identified as non-EL. If the lower compliance rate of accurately identified non-EL students biases results, it likely generates more conservative estimates of any negative impact of EL classification since some students who should not be in the EL category are.

A second assumption is that there was no manipulation of scores around the cutoff. This means that students or administrators should not be manipulating screener scores with the purpose of having a student fall below or above the EL cut score. We examined the distribution of screener

scores (Figure B in online appendix B) and found no indication of significant crowding around the cutoff. In addition to the visual check of the distribution, we also conducted a density test to check using local polynomial density estimators (Cattaneo et al., 2020). Our density test rejects the null hypothesis that there was a discontinuity in the density of cases at the cutoff.

A third assumption is that students in the treatment and control group are equal in expectation on observable and non-observable characteristics within the bandwidth. Although we cannot know if there are differences in non-observables, we can visually inspect if there are systematic differences on observable characteristics. Figure C in online appendix B presents a panel of graphs used to check this assumption. Visually, we do not observe apparent jumps in ADP scores, but do observe small jumps in the gender distribution and proportion of students eligible for FRPL. We formally test our observations in a regression framework, finding that scoring below the threshold significantly predicted gender and FRPL eligibility but no other pretreatment covariates including ADP language and literacy measures did so (Table E in online appendix B). For this reason, we included gender and FRPL eligibility among our covariates in the final model.

Lastly, regression discontinuity designs are sensitive to the specification of the right functional form, as incorrect specification may lead to a biased estimate of EL classification. To ensure we selected the right functional form, we first conducted a visual check by plotting and analyzing the relationship between the standardized screener score and our outcomes of interest. We then modeled the relationship using linear and polynomial functional forms. In both our visual inspection and comparison of model fits, we found the linear model was appropriate for all models. We do, however, include quadratic terms in our robustness checks, as described next.

Robustness Checks

We ran a range of robustness checks, including using different bandwidths of data, different functional forms and slope parameters, and inclusion and exclusion of covariates. We also used a growth model to estimate the impact of EL classification in 3rd grade and subsequent changes after the 3rd grade. In addition to different models, we also examined estimated effects with different samples, including among Alaska Native students within specific districts, and across districts that used the same screener assessment, and models that only included non-Alaska Native students. We focus the robustness checks on the models examining math and ELA test score outcomes as we consider these the primary outcome variables in this study. We describe these alternative analyses in appendix A and present results in Tables F (alternative models), G (alternative samples), and H (growth models) in online appendix B and in the results section. In addition, we conducted a placebo regression discontinuity analysis, testing for any discontinuities in test score outcomes for students above and below a placebo threshold set at 1.5 standard deviations below the actual cut-score. We chose -1.5 SD because it roughly centered the placebo cut-score in the middle of the distribution of screener scores. Results from the placebo analyses for math and ELA are in Table I of the online appendix. Results, as predicted, are close to zero and nonsignificant.

As an additional sensitivity check we also estimated the effect of EL classification using a coarsened exact matching (CEM) approach. The CEM approach relies on researcher expertise to identify matching variables that are predictive of treatment or the outcome measured (Iacus et al., 2012). The key benefit of CEM, compared to simple regression, is to reduce the sample to create more comparable treatment and control groups. In the context of our analysis, it also allows us to estimate the effect of EL classification with a population of students different than that of the RD, including students farther away from the cut score. However, the assumptions required to believe the resulting estimates as causal are stringent—that there are no unobserved variables influencing

the causal estimate. To reduce the threat of omitted variable bias, we only use the sample of students who were initially identified as potential ELs. We also draw on scores (ranging from 0-2) from the state's kindergarten entry assessment, requiring exact matches on scores for each of the ADP's five communication, language and literacy domain goals (e.g., expressive communication skills and phonological awareness). We further required exact matches on gender, identification for special education in kindergarten (omitted in models where special education is the outcome of interest), kindergarten FRPL eligibility, and whether or not Alaska Native. Table J in online Appendix B reports descriptive information for the 3rd grade math and ELA matched samples, alongside the full sample and the main RD bandwidth sample.

Using the matched sample, we then analyzed the relationship between EL classification and the outcomes of interest in a regression framework for the matched sample, using the same covariates included in RD models. However, we interpret our estimates with caution—not as standalone, causal estimates of the effect of EL classification—but as robustness check and an examination of possible EL classification effects among a wider group of students.

Results

Effects of EL Classification on Alaska Native Student Outcomes

Among students near the kindergarten EL threshold, EL classification has a negative impact on Alaska Native students' academic outcomes in math and ELA but little evidence of impact on special education identification or attendance. Table 2 shows results for academic outcomes from our main RD models and Figure 1 shows results across eleven alternative bandwidths, by subject and grade. Results are largely consistent across bandwidths. In both math and ELA, EL classification results in a negative effect on test scores of approximately a quarter to a third of a standard deviation in 3rd and 4th grade among students near the EL threshold.

Specifically, in math, there is a negative impact of EL classification on students near the threshold of .397 standard deviation units (SD) in 3rd grade and .281 SD in 4th grade. In ELA, negative effects are slightly smaller, but more consistent between 3rd and 4th grade, declining in absolute magnitude only slightly from .267 to .261 SD. The effect diminishes by grade five, where point estimates are considerably smaller in magnitude and are not statistically significant.

These 3rd and 4th grade effects are more than twice as large as prior estimates of the negative impact of kindergarten EL classification which did not focus on Alaska Native or other Indigenous students: for example, .093 SD in math and .070 in ELA in 3rd grade (Author, 2016). The effect sizes are important in the Alaska context as well. In the 3rd grade and over the time period examined, these effect sizes were equivalent to one third (33%) of the statewide achievement gap in ELA and over half (58%) of the gap in math on the state content assessment between Alaska Native and non-Alaska Native students.

Table 3 presents results for our two non-academic outcomes: special education identification and annual attendance rates for kindergarten through fifth grade. In neither case are there clear and statistically significant patterns in the results. For special education identification there is suggestive (nonsignificant) evidence that EL classification may result in a small negative effect on special education identification from kindergarten through third grade. In fourth and fifth grades the direction reverses, with EL-classified students at the threshold having slightly higher levels, still nonsignificant, of special education identification. Results are consistent across bandwidths. While suggestive, these findings correspond with prior research, as discussed later. For attendance rates, point estimates are small, largely non-significant, and, at times, inconsistent across bandwidths. Thus, we conclude that there are no clear and discernible effects of EL classification on attendance in grades K-5 among students near the EL threshold.

In sum, there is strong evidence that, for students near the threshold, EL classification negatively impacts Alaska Native students' math and English language arts outcomes in 3rd and 4th grade, with negative effects diminishing by 5th grade. There is some evidence that EL classification may result in lower special education identification by the 3rd grade, again dissipating or reversing in higher grades. Finally, there is little, if any, evidence that EL classification impacts Alaska Native students' school attendance.

Results across alternative RD model and sample specifications (see Tables F, G, and H in online appendix B) are negative and meaningful in size (roughly -.2 to -.4 in math, and -.1 to -.3 in ELA). Results from those modeling slope quadratically are, however, smaller in absolute magnitude and not statistically significant. Because the quadratic models have roughly equivalent model fit both visually and in terms of AIC, it is important to note them and consider the possibility of null findings. Growth model results also support our primary findings, with significant negative effects in 3rd grade that taper in subsequent years (diminished effects in subsequent grades are statistically significant only in math).

Findings from CEM analyses (see Table K in online appendix B) were consistently aligned with the direction of the effect estimated in the RD approach for math and ELA outcomes, although there were differences in magnitude and precision. While estimated effects of EL classification on math scores were negative in grades three and four for the matched sample, they are smaller in magnitude than the RD estimates and, unlike the RD, not statistically distinguishable from zero. For ELA outcomes, the effects of EL classification were, as the RD estimates, negative and large in magnitude, although the effect on 4th grade ELA outcomes was smaller and less precise when estimated with the matched sample, and larger and more precise for 5th grade ELA outcomes.

Differences in EL Classification Effects for Alaska Native and Non-Alaska Native Students

Our second research question explored differences in the effects of EL classification between Alaska Native and non-Alaska Native students near the kindergarten EL threshold. Because the number of non-Alaska Native students near the threshold was very small, we were interested in patterns in point estimates even in the absence of statistical significance. Table 4 presents results for math and ELA outcomes. In both cases, estimated effects for Alaska Native students ("Below Cut") were, as in our results for research question one, sizable, statistically significant or marginally significant, and negative in both third and fourth grade, with smaller, and non-significant effects in fifth grade. The "Never AN * Below Cut" coefficients reflect the difference in EL classification effects between Alaska Native and non-Alaska Native students. While point estimates were similar for both subject areas in the third and fourth grades, results regarding differences between the two groups of students were only statistically significant (or marginally so) in ELA.

In ELA, the estimated difference in the effect of EL classification for non-Alaska Native students compared to Alaska Native students was large, significant, and positive, suggesting that there is no negative effect of EL classification on non-Alaska Native students in 3rd or 4th grade and that overall estimated effect sizes were positive (though imprecise) or somewhat close to zero: -0.275 + 0.542 in third grade, for example. There was a similar pattern in math but because the difference estimates were not statistically significant, we cannot reject the null hypothesis that EL classification impacts Alaska Native and non-Alaska Native students similarly. Our robustness check using only non-Alaska Native students (Table G in appendix B) aligned with these findings. Though sample sizes were very small, estimates of the effect of EL classification on 3rd grade ELA and math scores were positive and non-significant. The ELA result, in particular, was meaningful in magnitude: 0.229.

Table 5 presents results for special education identification and attendance. In the case of special education identification, there was no evidence that EL classification impacts Alaska Native and non-Alaska Native students differently. Point estimates for the difference between Alaska Native and non-Alaska Native students were unstable and non-significant. In the case of attendance, point estimates of the coefficient of interest were more stable, and tended to be negative, although they were only statistically significant in 2nd grade. These results are highly tentative, but suggestive that EL classification may result in lower attendance rates – of one to four percentage points – among non-Alaska Native students near the EL threshold in kindergarten.

In summary, there was strong evidence that EL classification impacts Alaska Native students near the EL threshold more negatively than non-Alaska Native students in ELA in 3rd and 4th grade. There was tentative evidence that EL classification disproportionately and negatively impacted Alaska Native students in math, as well, while EL classification may disproportionately and negatively impact non-Alaska Native students with regard to school attendance.

Discussion

This study set out to examine how EL classification in kindergarten impacts Alaska Native students' educational outcomes in five school districts in Alaska, as well as to determine how, if at all, those impacts differed compared to EL classification impacts on non-Alaska Native students in the same districts. This question is pertinent because of the unique historical and social contexts of education for Alaska Native and other Indigenous students within the U.S. (Brayboy & Lomawaima, 2018) and because of the differentiated federal guidelines in EL identification for Indigenous students (ESSA, 2015). Yet to date, very limited research has examined Indigenous EL-classified students' experiences and outcomes as distinct from those of non-Indigenous EL students (for an exception see Carjuzaa and Ruff, 2016).

There are reasons to think that EL classification may, on average, be beneficial for Alaska Native students. EL classification is directly linked to rights, services, and funding for classified students, creating a basis of resources and specialized services for Alaska Native students who are heavily concentrated in rural schools that are often strapped for funding, materials, and resources (Barnhardt, 2001; National Indian Education Association, n.d.). Our partner study examination of Alaska school districts' EL service plans found that some districts offered Indigenous heritage language immersion programs as a central component of their EL services, while others had EL supports related to Alaska Native community and family engagement, culturally-sustaining pedagogy, or staffing of Alaska Native educators (Authors & others, 2021). While not widespread, this demonstrates that EL resources and services can be targeted toward supports that theory would suggest may be of importance for Alaska Native students.

On the other hand, among the overall EL population, EL classification has been shown to stigmatize students as non-English proficient (Dabach, 2014; Thompson, 2015) within a wider system that values Standard American English fluency (Wiley & Lukes, 1996). EL classification can negatively impact students' access to English proficient peers, self-concept, course access, academic achievement, and ultimately graduation and college-going (Chin, 2020; Johnson, 2019; Author, 2018). In addition, EL classification fails to recognize some students' fluency in non-standard English varieties (Flores & Rosa, 2015) and, as such, services are likely shaped largely around a prevalent image of an EL student of immigrant origin who has a non-English dominant language and is acquiring English as a new language. Furthermore, these is qualitative evidence that EL services, such as ELD, may displace culturally relevant content (Siekmann et al., 2017).

Thus, it is an open and important question whether (and under what circumstances; a question we do not address in this study) EL classification is beneficial to Alaska Native students.

While Indigenous students make up a small proportion (8%) of EL students nationally, in several U.S. states they make up large proportions of EL students (Office of English Language Acquisition, 2020), making this question all the more critical. Nine states (Alaska, Arizona, Idaho, Montana, New Mexico, Oklahoma, South Dakota, Utah, and Wyoming) report an Indigenous language as one of the top five EL home languages with another four states (Connecticut, Delaware, Massachusetts, and Rhode Island) reporting non-standard English varieties in the top five EL home languages (Ruiz Soto et al., 2015).

Using regression discontinuity to isolate the impact of EL classification on students' academic outcomes, we find that, among Alaska Native students who enter kindergarten with relatively high measured English proficiency levels on state English proficiency screeners, EL classification has a large, negative impact on students' math and ELA outcomes in third and fourth grade, with negative effects tapering by the fifth grade. Negative academic impacts were larger than those for non-Alaska Native students in Alaska, and also larger than effects identified in prior literature, including estimates of the impact of initial kindergarten EL classification, as is done here (Shin, 2018; Author, 2016), and the impact of remaining an EL rather than exiting EL status (Chin, 2020; Cimpian et al., 2017; Johnson, 2020; Pope, 2016). Regression discontinuity results provide strong causal estimates for students near the threshold of intervention assignment (Cook et al., 2008; Murnane & Willett, 2010) – in this case students who score near the top of the state's English proficiency screener assessments. Results from different model specifications and an examination with a wider population of causal inference add weight to our findings.

Results were less conclusive regarding attendance and special education, with no evidence to suggest that EL classification impacted Alaska Native students' attendance in elementary school grades, and limited evidence of a possible delayed effect of EL classification on special education

identification. This later, albeit tentative, finding aligns with prior research on a negative effect of EL classification on special education identification (Murphy & Johnson, 2020), and delayed special education identification among EL students (Author & others, 2017).

ESSA's Alternative EL Definition for Indigenous Students: Helpful or Harmful?

Unlike other students, Indigenous students who speak English as their sole or dominant language are eligible for EL classification and services if a heritage language has had a "significant impact" (ESSA, 2015) on their English language development. This more open criterion for EL eligibility takes into account the devastating impact that educational, social, and military policy has had on Indigenous languages – in some cases leading to language extinction, and in others language endangerment (Barnhardt, 2001; Krauss, 1996; Leap, 2012; Lomawaima & McCarty, 2006). The more open EL definition for Indigenous students appears to be in recognition that many American Indian and Alaska Native students *would* speak a language other than English as their primary language were it not for sanctioned laws and policies that stripped these students, families, and communities of many of their linguistic assets (Barnhardt, 2001; Spring, 2016). Closely related, the federal definition for Indigenous EL students also recognizes that many Indigenous students speak English varieties shaped by their heritage languages (Leap, 2012) rather than the Standard American English variety that is taught, assessed, and privileged in schools (Wiley & Lukes, 1996). Due to this history, most school-aged American Indian and Alaska Native students do not speak heritage languages at home (Siebens & Julian, 2011). In Alaska, only about 15% of the Alaska Native population ages 5-18 speaks a language other than English at home (United States Census Bureau, 2019).

Because Alaska's Department of Education does not collect data from students' home language surveys, we were not able to differentiate between Alaska Native students with and

without Indigenous home or primary languages. Future research should examine whether the negative impact we find of EL classification among Alaska Native students is moderated by whether a given student has a non-English home language and how effects shift in later grades.

Language Revitalization and Culturally Sustaining Education: In Alignment or Conflict with EL Policy?

Within the rich bodies of work on Indigenous education, key elements of positive and effective education include access to and instruction in heritage language development in support of language revitalization; culturally sustaining pedagogy and curricula that recognize and build on students' rich strengths, cultures, and communities; and self-determined education that is envisioned, created, and implemented by Indigenous educators, communities and tribes (Brayboy & Castagno, 2009; Center for Native American Youth, 2019; Charles, 2005; Lipka & Ilutsik, 1995; Lomawaima & McCarty, 2002; McCarty & Lee, 2014; Sabzalian, 2019). To the extent that EL resources are used to support such educational elements, EL classification may be appropriate and beneficial for Alaska Native students (Apthorp et al., 2002; Arviso & Holm, 2001; August et al., 2006; Lomawaima & McCarty, 2002; Smallwood et al., 2009).

However, a counter argument can be made that these educational and linguistic elements are not closely aligned with the primary goals of EL education as currently described and enacted in federal, state, and local policy and practice. Current key tenets of EL education, by law, are to provide linguistically-accessible grade-level core content instruction and English language instruction to students who, because of their lack of full English proficiency, cannot fully access English-centered schooling (ESSA, 2015; *Lau v. Nichols*, 1974). To the extent that bilingual education is aligned with EL education, it is, in large part, due to its ability to deliver grade-level content to students in a more accessible manner—their primary language (de Jong, 2002). This is

not the case in heritage language programs where many students are learning their heritage language as a new language. As such, the focus of EL policy toward accessible core content instruction and English acquisition, evident in accountability measures and annual high-stakes student testing (ESSA, 2015), may be in conflict with heritage language immersion programs.

Similarly, the core EL tenet of accessible core content instruction places a premium on established curricular standards rather than on efforts to center the curricular content valued and shaped within Indigenous communities (Jester & Fickel, 2013). Indeed, abundant research demonstrates that mandated high-stakes assessments compromise the mission and implementation of bilingual programs and culturally sustaining instruction (Jester, 2002; Jones & Ongtooguk, 2002; Menken, 2006; Palmer & Snodgrass Rangel, 2011; Wyman et al., 2010b). Finally, in an environment in which school time is already pressed due to standards and testing, mandated English language development instruction, the other core element of EL services, may displace what little time is available for culturally relevant and sustaining curricula (Siekmann et al., 2017).

Furthermore, many instructional techniques, curricula, and policies used to support EL-classified students may be of limited use, if not harmful, to students with different linguistic and historical profiles. Research suggests that EL services are primarily beneficial for immigrant students and students with beginning English skills (Callahan et al., 2010). Callahan and colleagues suggest that this is because EL services tend to be designed with these students in mind. English language development texts and curricula, for example, are designed for students acquiring English as a new language (Olsen, 2014), and annual assessments to determine students' eligibility to exit EL status are designed to measure proficiency in Standard American English (Solano-Flores, 2006), both of which may be inappropriate for English dominant speakers, including many Indigenous students.

Importantly, EL services do not need to be shaped around goals that are less relevant to students with more advanced English skills or those looking to develop a heritage language. For example, if the rights of EL students were to be extended to include home and heritage language development, wherever possible, EL identification and services might be shaped in ways that are much more attuned to Indigenous student profiles, skills, and needs. Current federal policies that define eligibility for EL services take into account the lasting impacts of past policies and differentiate eligibility for EL services for American Indian and Alaska Native students. EL services and goals could *also* be differentiated for Indigenous students to extend beyond the current primary goals of EL education as described above. These extended or differentiated goals could include heritage language development and Standard American English development with resource allocation to align with these goals.

EL Classification: An Opportunity to Teach the English Variety of Power?

Seminal work by Delpit (1995), including work in Alaska Native communities, identifies the importance of teaching Standard American English as the language of power. This instruction should recognize, teach, and celebrate the value and wholeness of students' primary English varieties while also teaching Standard American English as an important gatekeeper for social and economic opportunities outside of the community. Effective instruction toward these two goals, however, likely looks different than instruction toward the acquisition of a new language. Research on education for English non-standard variety speakers highlights methods such as comparing English varieties, awareness of English varieties, and direct instruction in the systematic differences between students' variety and Standard American English (Pearson et al., 2013; Rickford, 2005; Wheeler, 2006). By contrast, students learning English as a new language need to learn such linguistic elements as vocabulary, pronunciation, and, for some, the English alphabet.

Unfortunately, little is known about how EL services are differentiated for English dominant or monolingual students. Future research should examine how Alaska Native ELs who speak English as their dominant language are supported in school, focusing on the services they receive and how these services are differentiated from those acquiring English as a new language. Further, these studies should ascertain the extent to which these students' EL services are aligned with what is known about effective instruction for non-standard English speakers. Some parallels could be drawn from recommendations that examine the experiences of students who remain EL classified into the secondary grades. Research suggests that, despite remaining EL-classified, many students have a rich understanding of the English language, including different English varieties, and such proficiencies can be recognized and used to inform instruction (Brooks, 2017).

Limitations

While we argue that this study's results provide strong causal estimates of the impact of EL classification on Alaska Native students in five diverse Alaska districts, the study has several limitations. Causal inference in RD applies specifically to students near the treatment threshold. While we include a matching approach as a robustness check that allows for a broader student population, this approach relies on strong and difficult to prove assumptions. Nonetheless, the alignment in results between the two methods and the complementarity between the robustness of RDs' causal inference with the wider population of causal inference in the matching technique give strength to our findings. Two other key limitations were that we did not have access to students' primary languages, and that because of where Alaska sets their EL classification threshold on their screener assessments, we had limited data on the relationship of screener scores to our outcomes of interest for students above the EL threshold. We also had relatively small sample sizes, especially of non-Alaska Native ELs. Future research using larger samples, for

example, can examine whether negative impacts dissipate in fifth grade or beyond, as found here.

This study exemplifies that Indigenous EL students do not need to be clustered into an "other" category and that, in many states, the population is large enough for large-scale quantitative studies. In future research, it will be essential to see if EL classification has equally negative impacts on other American Indian, Alaska Native, and Native Hawaiian populations. There is a need for research that unpacks why and under what conditions EL classification impacts Indigenous students, and in what ways and for how long. For that, we believe it is important for future research to explore whether there are differences in the effects of EL classification for students who speak, or do not speak, English as their primary language and for students who have or do not have access to heritage language immersion programs and other supports differentiated for non-Standard American English speakers. We also argue for a much more robust body of research on how EL classification supports, or fails to support, Alaska Native and other Indigenous students, and what EL services are important and beneficial for these students.

Implications for Policy and Practice

We close with several implications of this work for policy and practice. First, the finding that, among students near the threshold, EL classification has a large, negative impact on Alaska Native students' academic outcomes in the elementary grades begs a foundational question of whether EL classification is appropriate for monolingual English-speaking Alaska Native students as currently specified in ESSA (2015), and if so, what is meant by a non-English language having a "significant impact" on students' English proficiency. Currently, while the EL definition is differentiated for Indigenous students, there is no federal guidance on how to operationalize and adapt services based on this alternative definition. Of note, non-Indigenous student groups, such as Black students, who speak non-standard English varieties influenced by heritage languages and

forced linguistic assimilation are not currently eligible for EL classification and services (Baldwin, 1997; Paris & Ball, 2011; Winford, 1997).

Few states have clear and differentiated procedures for identifying Indigenous EL students, although some, including Montana, Washington, and North Dakota, are exceptions (Montana Office of Public Instruction, 2020; North Dakota Department of Public Instruction, no date; Author & others, in preparation; Washington Superintendent of Public Instruction, 2017). Alternative and more direct mechanisms to support the educational opportunities and outcomes of Alaska Native students might include funding for schools serving high proportions of Indigenous students and supports for Indigenous heritage language immersion programs through Title VI of the Elementary and Secondary Education Act.

If Alaska Native students continue to be identified as ELs in the absence of a non-English home language, then our results suggest that current EL services, at least in the five districts examined, may not be meeting Alaska Native students' needs. Adapting EL services to meet the individual profiles and needs of students, and/or developing and differentiating services for non-immigrant students and students with higher levels or English proficiency, including fluent speakers of non-standard English varieties, may be a positive way forward (Brooks, 2017). Indeed, prior work demonstrates how, despite acculturative policies focused on Standard American English acquisition, EL-classified students and their families and communities have historically pushed back and shaped EL supports to better meet their needs and interests (Charles, 2005; Schultz, 2016). Specifically, EL services may be strengthened by focusing resources and services on the supports identified as beneficial for Indigenous students and speakers of non-standard English varieties: heritage language programs, culturally-relevant instruction, and instruction in Standard English development (Brayboy & Castagno, 2009; Charles, 2005; Lipka & Adams, 2004;

Lipka & Ilutsik, 1995; McCarty & Lee, 2014; McCarty, 2008; Nelson-Barber & Trumbull, 2015; Pearson et al., 2013). The National Advisory Council on Indian Education, in its annual report to congress, indeed, calls for expansion of Indigenous language development and revitalization programs through Title III (National Advisory Council on Indian Education, 2016), as does a broad group of Alaska stakeholders through the Alaska Native Knowledge Network (2001).

How and when Alaska Native students should be identified for EL classification, and how they should be served and supported while EL-classified, are important decisions that should be considered and determined by the communities most impacted by these policies and practices, centering Indigenous self-determination in any policy and practice discussions. At the federal level, the Department of Education could convene a group of Indigenous stakeholders, to determine what a significant impact on English language proficiency means, and what EL supports should look like for students who are already fluent English speakers of non-standard varieties. At the state and local level, Alaska Native and other Indigenous communities, educators, families, and leaders should be the foremost decision-makers in how EL supports are shaped and enacted for Indigenous students. Existing organizations such as the Alaska Native Language Preservation and Advisory Council and district Indian education parent committees — which districts are required to establish to access Title VI funds (ESSA, 2015, § 6114[c]) — could be potential spaces for Alaska Native communities to shape EL services and supports.

Table 1: Mean student characteristics among sample used in the math and English language arts analyses, by Alaska Native identity and English learner classification

Student Characteristics	Full Sample	Alaska Native		Not Alaska Native	
		EL	Not EL	EL	Not EL
Number of unique students	1567	1221	90	222	34
Kindergarten EL screener assessment results (mean scores)					
W-APT oral composite score	18.40	17.45	26.97	20.23	26.34
MODEL oral composite score	2.83	2.64	6.00	2.56	6.00
Alaska Development Profile (ADP) kindergarten measures (mean scores)					
Receptive communication skills	1.42	1.40	1.60	1.39	1.59
Expressive communication skills	1.21	1.19	1.53	1.14	1.50
Phonological awareness	1.05	1.01	1.22	1.08	1.53
Print Concepts	1.13	1.09	1.35	1.19	1.63
Letters and symbols	1.16	1.10	1.35	1.33	1.69
Areas child rated 2 (out of 13)	5.54	5.28	7.59	5.91	7.47
Demographic and special program participation (percent)					
Ever identified with a disability	15	14	12	18	24
Ever FRPL	92	96	85	72	62
Male	49	49	47	52	53
Academic skills measure (standard deviation units)					
Grade 3 math	-0.86	-0.98	-0.40	-0.37	-0.23
Grade 4 math	-0.79	-0.92	-0.45	-0.33	0.28
Grade 5 math	-0.72	-0.88	-0.65	-0.24	0.44
Grade 3 ELA	-0.94	-1.09	-0.54	-0.25	-0.06
Grade 4 ELA	-0.96	-1.13	-0.58	-0.26	0.20
Grade 5 ELA	-0.86	-1.07	-0.63	-0.17	0.26

Notes: Alaska Development Profile (ADP) kindergarten measures are scored on a scale from 0 to 2 where 0 indicates 'does not demonstrate', 1 indicates 'progressing', and 2 indicates 'consistently demonstrating' the indicated skills or behavior. FRPL = Free reduced price lunch eligible. ELA = English language arts.

Table 2: Estimated effect of EL classification on math and English language arts standardized test scores, among Alaska Native students, by grade and bandwidth

Variable	Grade 3			Grade 4			Grade 5		
Math	BW=1	**1.5**	2	1	**1.5**	2	1	**1.5**	2
Running	0.325*	**0.042**	0.058	0.264*	**0.021**	0.013	0.571**	**0.087**	0.014
	(0.122)	**(0.082)**	(0.051)	(0.087)	**(0.058)**	(0.052)	(0.116)	**(0.080)**	(0.074)
Below Cut	-0.196~	**-0.397****	-0.388***	-0.172*	**-0.281****	-0.277***	0.246*	**0.034**	-0.030
	(0.104)	**(0.098)**	(0.074)	(0.069)	**(0.067)**	(0.060)	(0.102)	**(0.134)**	(0.138)
Student covariates	X	**X**	X	X	**X**	X	X	**X**	X
School covariates	X	**X**	X	X	**X**	X	X	**X**	X
Cohort FE	X	**X**	X	X	**X**	X	X	**X**	X
District FE	X	**X**	X	X	**X**	X	X	**X**	X
N	288	**432**	521	250	**380**	482	229	**360**	452
adj. R-sq	0.252	**0.213**	0.213	0.187	**0.186**	0.204	0.238	**0.218**	0.187
ELA									
Running	0.324**	**0.154***	0.124**	0.239~	**0.110**	0.088*	0.522**	**0.133~**	0.072
	(0.072)	**(0.059)**	(0.034)	(0.126)	**(0.068)**	(0.031)	(0.113)	**(0.067)**	(0.054)
Below Cut	-0.115	**-0.267****	-0.282***	-0.224~	**-0.261***	-0.261*	0.074	**-0.120**	-0.180
	(0.082)	**(0.073)**	(0.0521)	(0.115)	**(0.119)**	(0.100)	(0.160)	**(0.196)**	(0.193)
Student covariates	X	**X**	X	X	**X**	X	X	**X**	X
School covariates	X	**X**	X	X	**X**	X	X	**X**	X
Cohort FE	X	**X**	X	X	**X**	X	X	**X**	X
District FE	X	**X**	X	X	**X**	X	X	**X**	X
N	288	**432**	521	250	**380**	482	229	**360**	452
adj. R-sq	0.173	**0.143**	0.139	0.176	**0.157**	0.177	0.326	**0.261**	0.236

Notes: Standard errors in parentheses. ELA = English language arts. Optimal bandwidth in bold font.
~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 3: Estimated effect of EL classification on annual disability identification and attendance rates, among Alaska Native students, by grade and bandwidth

Disability identification	Kindergarten			Grade 1			Grade 2			Grade 3			Grade 4			Grade 5		
	BW=0.5	**1**	1.5	0.5	**1**	1.5	0.5	**1**	1.5	0.5	**1**	1.5	0.5	**1**	1.5	0.5	**1**	1.5
Running	-0.128~	**-0.045***	-0.027**	-0.050	**-0.022**	-0.018*	-0.079	**-0.001**	-0.019	-0.056~	**0.014**	-0.028*	-0.060	**-0.003**	-0.024	0.019	**0.007**	-0.031
	-0.047	**(0.017)**	(0.007)	(0.086)	**(0.022)**	(0.007)	(0.081)	**(0.021)**	(0.017)	(0.023)	**(0.023)**	(0.011)	(0.057)	**(0.029)**	(0.020)	(0.133)	**(0.035)**	(0.030)
Below Cut	-0.041	**-0.018**	-0.012	-0.017	**-0.012**	-0.014	-0.040	**-0.019**	-0.030	-0.044*	**-0.025**	-0.045**	-0.005	**0.010**	0.008	0.073	**0.050**	0.032
	(0.020)	**(0.016)**	(0.014)	(0.043)	**(0.030)**	(0.027)	(0.041)	**(0.029)**	(0.027)	(0.015)	**(0.017)**	(0.014)	(0.029)	**(0.017)**	(0.021)	(0.038)	**(0.035)**	(0.030)
Student covariates	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
School covariates	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
Cohort FE	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
District FE	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
N	412	**746**	1157	357	**647**	990	308	**548**	841	246	**455**	683	178	**336**	511	128	**233**	366
adj. R-sq	0.250	**0.156**	0.116	0.084	**0.048**	0.052	0.070	**0.042**	0.054	0.063	**0.028**	0.054	0.052	**0.018**	0.077	0.003	**0.018**	0.021
Attendance rate																		
Running	0.101	**0.028**	-0.007	0.093	**0.015**	-0.012	0.135***	**0.046*****	0.006	0.022	**0.021*****	0.002	0.048	**0.041*****	0.001	0.036	**0.023**	0.008
	(0.071)	**(0.020)**	(0.011)	(0.065)	**(0.023)**	(0.011)	(0.009)	**(0.010)**	(0.008)	(0.017)	**(0.003)**	(0.006)	(0.041)	**(0.008)**	(0.008)	(0.024)	**(0.015)**	(0.005)
Below Cut	0.020	**-0.002**	-0.018	0.016	**-0.008**	-0.021	0.050***	**0.021~**	0.002	-0.008	**-0.009~**	-0.018**	0.028	**0.022***	0.002	0.019	**0.009**	0.002
	(0.024)	**(0.021)**	(0.020)	(0.025)	**(0.021)**	(0.017)	(0.004)	**(0.010)**	(0.011)	(0.010)	**(0.004)**	(0.005)	(0.015)	**(0.010)**	(0.010)	(0.010)	**(0.006)**	(0.008)
Student covariates	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
School covariates	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
Cohort FE	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
District FE	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
N	412	**746**	1157	357	**647**	990	308	**548**	841	246	**455**	683	178	**336**	511	128	**233**	366
adj. R-sq	0.114	**0.086**	0.063	0.137	**0.132**	0.119	0.172	**0.184**	0.116	0.169	**0.159**	0.122	0.145	**0.154**	0.064	0.056	**0.018**	0.037

Notes: EL = English learner. FE = Fixed effects. Standard errors in parentheses. Optimal bandwidth in bold font.

~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 4: Estimated effect of EL classification on math and English language arts standardized test scores, among all English learner students, by Alaska Native and non-Alaska Native identity, grade, and bandwidth

	Grade 3			Grade 4			Grade 5		
Math	BW=1	**1.5**	2	1	**1.5**	2	1	**1.5**	2
Running	0.350*	**0.050**	0.055	0.298**	**0.025**	0.014	0.510**	**0.078**	0.015
	(0.122)	**(0.076)**	(0.051)	(0.092)	**(0.065)**	(0.0556)	(0.117)	**(0.077)**	(0.072)
Below Cut	-0.197	**-0.410****	-0.408***	-0.090	**-0.239****	-0.244**	0.202	**0.014**	-0.041
	(0.111)	**(0.105)**	(0.081)	(0.091)	**(0.081)**	(0.0662)	(0.138)	**(0.161)**	(0.159)
	0.017	**-0.095**	-0.057	0.175	**0.237~**	0.272*	0.820~	**0.773~**	0.828*
Never Alaska Native	(0.127)	**(0.201)**	(0.185)	(0.099)	**(0.122)**	(0.0948)	(0.398)	**(0.398)**	(0.373)
	-1.261*	**-0.035**	-0.099	-0.958	**0.377~**	0.065	-1.018	**-0.107**	-0.154
Never AN * Running	(0.409)	**(0.191)**	(0.149)	(0.588)	**(0.185)**	(0.160)	(0.614)	**(0.181)**	(0.162)
Never AN * Below Cut	-0.178	**0.367**	0.318	-0.484	**0.204**	-0.0443	-0.929~	**-0.516**	-0.571
	(0.134)	**(0.216)**	(0.194)	(0.370)	**(0.266)**	(0.221)	(0.417)	**(0.373)**	(0.351)
Student covariates	X	**X**	X	X	**X**	X	X	**X**	X
School covariates	X	**X**	X	X	**X**	X	X	**X**	X
Cohort FE	X	**X**	X	X	**X**	X	X	**X**	X
District FE	X	**X**	X	X	**X**	X	X	**X**	X
N	335	**503**	597	294	**447**	557	283	**442**	544
adj. R-sq	0.267	**0.239**	0.249	0.292	**0.279**	0.295	0.335	**0.318**	0.303
ELA									
Running	0.322***	**0.142***	0.110**	0.255~	**0.103**	0.085*	0.463**	**0.126~**	0.069
	(0.064)	**(0.056)**	(0.035)	(0.123)	**(0.069)**	(0.032)	(0.105)	**(0.065)**	(0.052)
Below Cut	-0.128	**-0.275****	-0.297***	-0.182	**-0.264~**	-0.260*	0.013	**-0.170**	-0.215
	(0.086)	**(0.074)**	(0.052)	(0.135)	**(0.127)**	(0.106)	(0.205)	**(0.227)**	(0.223)
	0.146	**0.127~**	0.148~	0.111	**0.173**	0.203~	0.617~	**0.665~**	0.725*
Never Alaska Native	(0.092)	**(0.064)**	(0.074)	(0.164)	**(0.125)**	(0.102)	(0.337)	**(0.361)**	(0.345)
	-0.434	**0.142**	0.163	0.012	**0.193**	-0.033	-1.346*	**0.013**	-0.167
Never AN * Running	(0.399)	**(0.165)**	(0.128)	(0.356)	**(0.140)**	(0.128)	(0.475)	**(0.209)**	(0.198)
Never AN * Below Cut	0.266	**0.542***	0.545**	0.269	**0.370~**	0.189	-0.670~	**0.008**	-0.146
	(0.301)	**(0.197)**	(0.187)	(0.269)	**(0.177)**	(0.149)	(0.316)	**(0.365)**	(0.353)
Student covariates	X	**X**	X	X	**X**	X	X	**X**	X
School covariates	X	**X**	X	X	**X**	X	X	**X**	X
Cohort FE	X	**X**	X	X	**X**	X	X	**X**	X
District FE	X	**X**	X	X	**X**	X	X	**X**	X
N	335	**503**	597	294	**447**	557	283	**442**	544
adj. R-sq	0.248	**0.253**	0.249	0.314	**0.322**	0.349	0.465	**0.419**	0.411

Notes: EL = English learner. AN = Alaska Native. FE = Fixed effects. Standard errors in parentheses. Optimal bandwidth in bold font.

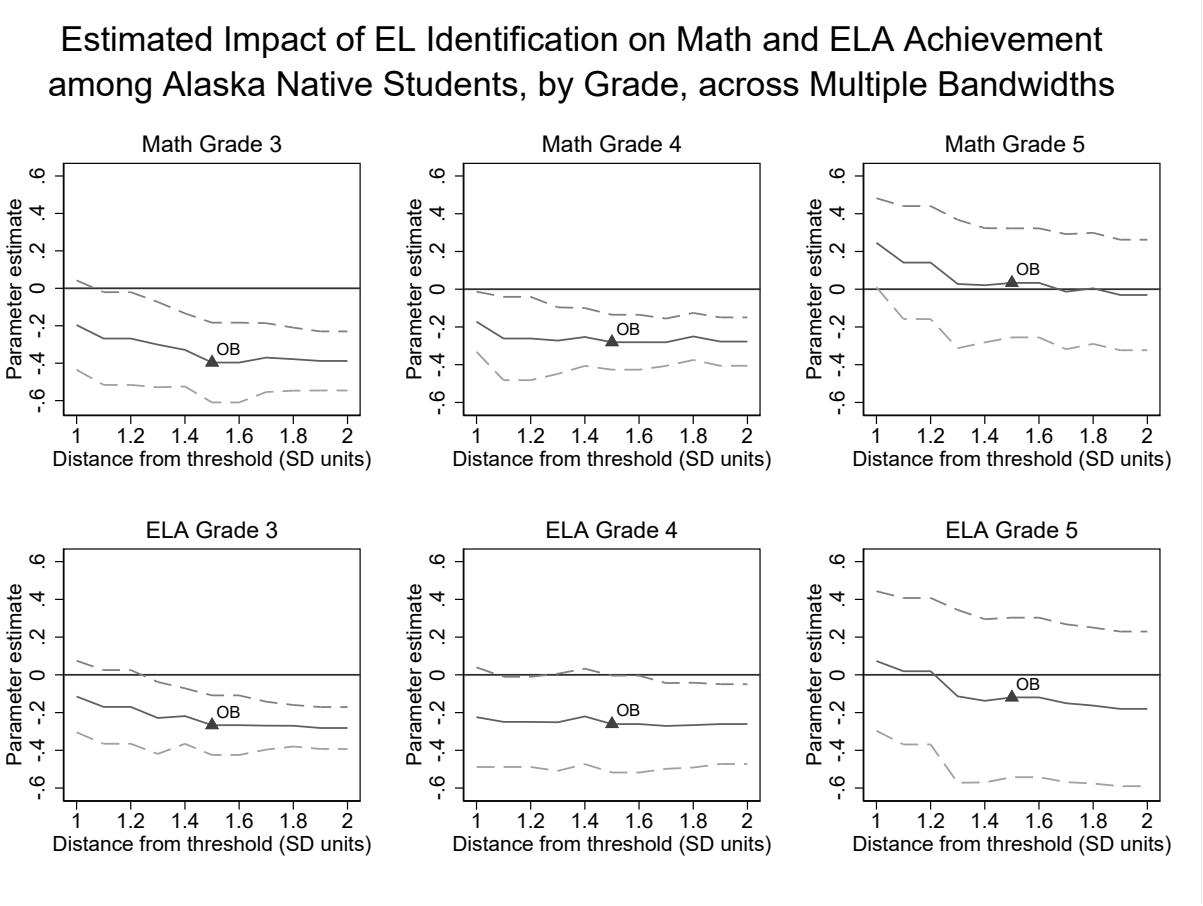
~p<0.10, *p<.05, ** p<.01, ***p<.001

Table 5: Estimated effect of EL classification on annual disability identification and attendance rates, among all English learner students, by Alaska Native and non-Alaska Native identity, grade, and bandwidth

	Kindergarten			Grade 1			Grade 2			Grade 3			Grade 4			Grade 5		
	BW=0.5	**1**	1.5	0.5	**1**	1.5	0.5	**1**	1.5	0.5	**1**	1.5	0.5	**1**	1.5	0.5	**1**	1.5
Running	-0.126*	**-0.036***	-0.026**	-0.053	**-0.015**	-0.021*	-0.113	**0.012**	-0.019	-0.046	**0.023**	-0.028~	-0.062	**0.003**	-0.028	0.062	**0.010**	-0.035
	(0.037)	**(0.014)**	(0.007)	(0.087)	**(0.022)**	(0.009)	(0.090)	**(0.022)**	(0.020)	(0.049)	**(0.025)**	(0.014)	(0.064)	**(0.030)**	(0.023)	(0.112)	**(0.033)**	(0.032)
Below Cut	).049*	**-0.019**	-0.019	-0.030	**-0.018**	-0.023	-0.056	**-0.018**	-0.040	-0.050~	**-0.026~**	-0.056**	-0.012	**0.005**	-0.005	0.073	**0.042**	0.024
	(0.017)	**(0.017)**	(0.016)	(0.043)	**(0.028)**	(0.027)	(0.044)	**(0.026)**	(0.029)	(0.022)	**(0.014)**	(0.015)	(0.030)	**(0.020)**	(0.024)	(0.038)	**(0.030)**	(0.029)
Never AN	0.047	**0.006**	-0.039	0.016	**0.008**	-0.021	0.036	**0.032**	0.017	-0.042	**-0.039**	-0.048	0.114~	**0.051**	0.021	-0.016	-0.029	-0.003
	(0.105)	**(0.095)**	(0.085)	(0.065)	**(0.052)**	(0.053)	(0.124)	**(0.082)**	(0.077)	(0.132)	**(0.097)**	(0.087)	(0.046)	**(0.066)**	(0.081)	(0.095)	(0.035)	(0.038)
Never AN * Running	-0.017	**0.155**	0.055	0.065	**0.136**	0.015	0.274	**0.210**	0.087	0.478	**0.343**	0.101	-0.183	**0.225**	0.093	0.875	0.315	0.035
	(0.498)	**(0.104)**	(0.052)	(0.345)	**(0.087)**	(0.064)	(0.906)	**(0.229)**	(0.088)	(0.944)	**(0.256)**	(0.110)	(1.069)	**(0.255)**	(0.105)	(1.151)	(0.219)	(0.102)
Never AN * Below Cut	0.002	**0.042**	0.002	0.048	**0.060**	-0.002	0.130	**0.102**	0.042	0.237	**0.186**	0.076	-0.112	**0.014**	-0.055	0.277	0.101	-0.023
	(0.163)	**(0.078)**	(0.063)	(0.133)	**(0.059)**	(0.053)	(0.369)	**(0.169)**	(0.098)	(0.359)	**(0.192)**	(0.130)	(0.440)	**(0.200)**	(0.118)	(0.439)	(0.165)	(0.088)
Student covariates	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
School covariates	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
Cohort FE	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
District FE	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
N	412	**746**	1157	357	**647**	990	308	**548**	841	246	**455**	683	178	**336**	511	128	233	366
adj. R-sq	0.250	**0.156**	0.116	0.084	**0.048**	0.052	0.070	**0.042**	0.054	0.063	**0.028**	0.054	0.052	**0.018**	0.077	0.003	0.018	0.021
Attendance rate																		
Running	0.101	**0.028**	-0.007	0.093	**0.015**	-0.012	0.135***	**0.046*** **	0.006	0.022	**0.021*** **	0.002	0.048	**0.041*** **	0.001	0.036	0.023	0.008
	(0.071)	**(0.020)**	(0.011)	(0.065)	**(0.023)**	(0.011)	(0.009)	**(0.010)**	(0.008)	(0.017)	**(0.003)**	(0.006)	(0.041)	**(0.008)**	(0.008)	(0.024)	(0.015)	(0.005)
Below Cut	0.020	**-0.002**	-0.018	0.016	**-0.008**	-0.021	0.050***	**0.021~**	0.002	-0.008	**-0.009~**	-0.018**	0.028	**0.022***	0.002	0.019	0.009	0.002
	(0.024)	**(0.021)**	(0.020)	(0.025)	**(0.021)**	(0.017)	(0.004)	**(0.010)**	(0.011)	(0.010)	**(0.004)**	(0.005)	(0.015)	**(0.010)**	(0.010)	(0.010)	(0.006)	(0.008)
Never AN	-0.021	**-0.001**	0.008	-0.020	**-0.012**	-0.009	0.010	**0.015**	0.014	-0.036*	**-0.023***	-0.026**	-0.021	**-0.008**	-0.002	-0.013	-0.005	-0.011
	(0.017)	**(0.016)**	(0.017)	(0.018)	**(0.013)**	(0.011)	(0.014)	**(0.010)**	(0.010)	(0.014)	**(0.009)**	(0.007)	(0.014)	**(0.009)**	(0.012)	(0.011)	(0.008)	(0.007)
Never AN * Running	0.037	**-0.042**	0.003	-0.019	**-0.031**	0.007	-0.018	**-0.083****	-0.014	0.055~	**-0.066***	-0.022	0.090	**-0.076**	-0.005	0.060	-0.030	-0.007
	(0.161)	**(0.041)**	(0.020)	(0.107)	**(0.038)**	(0.014)	(0.054)	**(0.024)**	(0.011)	(0.022)	**(0.022)**	(0.015)	(0.145)	**(0.043)**	(0.022)	(0.102)	(0.038)	(0.014)
Never AN * Below Cut	0.015	**-0.010**	0.011	0.012	**0.010**	0.026	-0.015	**-0.041****	-0.006	0.024*	**-0.013**	0.011	0.010	**-0.042**	-0.005	0.005	-0.021	-0.007
	(0.053)	**(0.031)**	(0.026)	(0.039)	**(0.026)**	(0.018)	(0.025)	**(0.012)**	(0.012)	(0.008)	**(0.017)**	(0.015)	(0.057)	**(0.031)**	(0.026)	(0.038)	(0.023)	(0.014)
Student covariates	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
School covariates	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
Cohort FE	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
District FE	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X	X	**X**	X
N	412	**746**	1157	357	**647**	990	308	**548**	841	246	**455**	683	178	**336**	511	128	233	366
adj. R-sq	0.114	**0.086**	0.063	0.137	**0.132**	0.119	0.172	**0.184**	0.116	0.169	**0.159**	0.122	0.145	**0.154**	0.064	0.056	0.018	0.037

Notes: EL = English learner. AN = Alaska Native. FE = Fixed effects. Standard errors in parentheses. Optimal bandwidth in bold font.
~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Figure 1



Note: Solid line represents parameter estimates with dotted lines representing 95% confidence interval. Bandwidths calculated for every .1 standard deviation between one and two. EL = English learner. ELA = English language arts. OB = Optimal bandwidth. SD = Standard deviation.

Endnotes

[1] In this paper, we use the term Indigenous to refer to members of Alaska Native, Native American, and Native Hawaiian communities. We recognize that this term is imperfect, in part because considerable numbers of EL-classified students are Indigenous students from other regions, such as Maya students from Southern Mexico.

[2] Standard American English refers to an English variety that is often associated with formal education contexts in the United States (Devereaux & Palmer, 2019). The positioning and defining of standardized language are deeply intertwined with race, as, Flores and Rosa (2015) describe that, "the ideological construction and value of standardized language practices are anchored in what we term raciolinguistic ideologies that conflate certain racialized bodies with linguistic deficiency unrelated to any objective linguistic practices. That is, raciolinguistic ideologies produce racialized speaking subjects who are constructed as linguistically deviant even when engaging in linguistic practices positioned as normative or innovative when produced by privileged white subjects" (p. 150)

[3] Yupik refers to a language family that includes Central Yup'ik (Yugtun), Cup'ik (Cu'pig), Supiaq (Alutiiq), and Siberian Yupik (Krauss, 1974).

[4] Heritage language programs are a type of bilingual program designed to support members of a community with a cultural connection to a non-English heritage language in acquiring fluency in their heritage language (National Clearinghouse for English Language Acquisition, n.d.).

[5] Specifically, this study is an Institute of Education Sciences funded Regional Educational Laboratory Study (REL) Northwest study from 2021.

[6] Alaska EL identification was, in theory, somewhat more complex (DEED, 2020). Students who scored above EL thresholds in the fall were expected to be tested in English reading and writing during in the spring of their kindergarten year. Depending on their performance on those subsequent portions of the screener assessments, students could either continue to be classified as initially English proficient or could switch into EL classification. That said, there was little indication in our data that this second stage of EL identification was followed with fidelity in the five districts examined. First, the fall oral composite score was a reliable predictor of EL classification, with 97% of students having the appropriate language classification based solely on their fall speaking and listening test components. Second, not all participating districts in our sample collected and shared reading and writing assessment results, including the district that contributed the largest proportion of our sample. Finally, districts that did share W-APT and MODEL reading and writing results did not appear to consistently administer these assessments across all students, nor use them to determine EL status. For example, in one district that shared reading and writing assessments, only one third of students who should have taken the spring subtests (i.e., who had an oral composite scored above the EL classification threshold) in fact had a record of a reading assessment. For these reasons, we decided to use the oral composite score as the forcing variable that sorts students into treatment or control group.

[7] Prior to shifting to the PEAKS assessment, Alaska used a different assessment, except in 2015/16 when statewide assessments were canceled due to technical difficulties. As such we only include cohorts in our analysis who took the PEAKS assessment. Math and ELA outcomes observed in third grade include students who entered kindergarten during the 2013/14 school year up to the 2015/16 school year. Outcomes observed in grade four include students who entered kindergarten during the 2012/13 school year up to the 2014/15 school year. Outcomes observed in grade five include students that entered kindergarten between the 2011/12 school year up to the 2014/15 school year. Table B in online appendix B illustrates the cohorts included in each analysis.

References

Ahler, J. G. (2007). The impact of immigration on bilingualism among Indigenous American peoples. *Forum on Public Policy*, 1-22.

Alaska Department of Education and Early Development. (2018). *Alaska State ESSA Plan*.

Alaska Department of Education and Early Development. (2020). *Guidance for English learner identification, assessment, and data reporting.* . https://education.alaska.gov/ESEA/TitleIII-A/docs/EL_Identification.docx

Alaska Department of Education and Early Development. (n.d.). *Data Center*. https://education.alaska.gov/data-center

Alaska National Interest Lands Conservation Act, Pub. L. No. Pub.L. 96–487, (1980).

Alaska Native Educational Equity, Support and Assistance Act, (2002). Pub. L. 89–10, Title VI, § 6301.

Alaska Native Knowledge Network. (1998). *Alaska standards for culturally responsive schools*. Fairbanks, AK. University of Alaska Fairbanks. Retrieved from: http://ankn.uaf.edu/Publications/CulturalStandards.pdf

Alaska Native Knowledge Network. (2001). *Guidelines for strengthening Indigenous languages.* Fairbanks, AK. University of Alaska Fairbanks. Retrieved from: https://www.uaf.edu/ankn/publications/pdfs/Language.pdf.

Alaska Native Language Center. (n.d.). *Central Yup'ik*. Retrieved from: https://www.uaf.edu/anlc/languages/centralakyupik.php#:~:text=Central%20Alaskan%20Yup'ik%20is,are%20speakers%20of%20the%20language

Alaska Native Language Preservation & Advisory Council. (n.d.). *How Many Speakers are There of Each Alaska Native Language?* Retrieved from: https://www.commerce.alaska.gov/web/dcra/AKNativeLanguagePreservationAdvisoryCouncil/Languages.aspx

Apthorp, H. S., D'Amato, E. D., & Richardson, A. (2002). *Effective standards-based practices for Native American students: A review of research literature*. Mid-Continent Research for Education and Learning, Aurora, CO.

Arviso, M., & Holm, W. (2001). Tséhootsooídi Ólta'gi DinéBizaad Bíhoo'aah. A Navajo immersion program at Fort Defiance, Arizona. In Hinton, L., Hale, K. (Eds.), The green book of language revitalization in practice (pp. 203–215). San Diego, CA: Academic Press.

August, D., Goldenberg, C., & Rueda, R. (2006). Native American children and youth: Culture, language, and literacy. *Journal of American Indian Education*, *45*(3), 24-37.

Ault, P., & John, L. (2017). *Obscured identities: Improving the accuracy of identification of American Indian and Alaska Native students.* Education Northwest, Portland OR.

Ayuluk, F., Ayuluk, J., Friday-Tall, S., Matchian, M. T., Tulim, P., Olson, L., . . . Ortega, I. (2015). Sustaining place, language, and culture together. *Science Education and Civic Engagement, 7*(2), 69-77.

Bailey, A. L., & Kelly, K. R. (2013). Home language survey practices in the initial identification of English learners in the United States. *Educational Policy*, *27*(5), 770-804.

Baldwin, J. (1997). If Black English isn't a language, then tell me, what is? *The Black Scholar*, *27*(1), 5-6.

Barnhardt, C. (2001). A history of schooling for Alaska Native people. *Journal of American Indian Education*, 1-30.

Barnhardt, R., & Oscar Kawagley, A. (2005). Indigenous knowledge systems and Alaska Native ways of knowing. *Anthropology & Education Quarterly*, *36*(1), 8-23.

Beaulieu, D. (2008). Native American education research and policy development in an era of No Child Left Behind: Native language and culture during the administrations of Presidents Clinton and Bush. *Journal of American Indian Education*, *47*(1), 10-45.

Bilagody, M. J. (2014). The perceptions of parents, teachers, and principals of American Indian English language learners and teaching strategies that address ELL learning needs: A multi-vocal qualitative study. *Unpublished doctoral dissertation*. Penn State.

Brayboy, B. M. J., & Castagno, A. E. (2009). Self-determination through self-education: Culturally responsive schooling for Indigenous students in the USA. *Teaching Education*, *20*(1), 31-53.

Brayboy, B. M. J., & Lomawaima, K. T. (2018). Why don't more Indians do better in school? The battle between U.S. schooling & American Indian/Alaska Native Education. *Daedalus*, *147*(2), 82-94.

Brooks, M. D. (2017). "She doesn't have the basic understanding of a language": Using spelling research to challenge deficit conceptualizations of adolescent bilinguals. *Journal of Literacy Research*, *49*(3), 342-370.

Bureau of Indian Affairs. (2019). *Alaska Region*. Washington, DC. Retrieved from: https://www.bia.gov/regional-offices/alaska

Callahan, R., & Gándara, P. (2014). *Bilingual advantage: Language, literacy, and the labor market*. Multilingual Matters.

Callahan, R., Wilkinson, L., & Muller, C. (2008). School context and the effect of ESL placement on Mexican-origin adolescents' achievement. *Social Science Quarterly*, *89*(1), 177-198.

Callahan, R., Wilkinson, L., & Muller, C. (2010). Academic achievement and course taking among language minority youth in US schools: Effects of ESL placement. *Educational Evaluation and Policy Analysis*, *32*(1), 84-117.

Carjuzaa, J., & Ruff, W. G. (2016). American Indian English language learners: Misunderstood and under-served. *Cogent Education*, *3*(1), 122-197.

Carlson, D., & Knowles, J. (2016). The effect of English language learner reclassification on student ACT scores, high school graduation, and postsecondary enrollment: Regression discontinuity evidence from Wisconsin. *Journal of Policy Analysis and Management*, *35*(3), 559-586.

Castagno, A. E., & Brayboy, B. M. J. (2008). Culturally responsive schooling for Indigenous youth: A review of the literature. *Review of Educational Research*, *78*(4), 941-993.

Cattaneo, M. D., Jansson, M., & Ma, X. (2020). Simple local polynomial density estimators. *Journal of the American Statistical Association*, *115*(531), 1449-1455.

Center for Native American Youth. (2019). Native youth count: The state of native youth 2019. Aspen, CO: Center for Native American Youth at The Aspen Institute.

Charles, W. (2005). Qaneryaramta egmiucia: Continuing our language. *Anthropology & Education Quarterly*, *36*(1), 107-111.

Chin, M. J. (2020). The Effect of English learner reclassification on student achievement and noncognitive outcomes. *Journal of Research on Educational Effectiveness*, *14*(1), 57-89.

Cimpian, J. R., Thompson, K. D., & Makowski, M. B. (2017). Evaluating English learner reclassification policy effects across districts. *American Educational Research Journal*, *54*(1_suppl), 255S-278S.

Cook, T. D., Shadish, W. R., & Wong, V. C. (2008). Three conditions under which experiments and observational studies produce comparable causal estimates: New findings from within-study comparisons. *Journal of Policy Analysis and Management*, *27*(4), 724-750.

Crawford, J. (1997). *Best Evidence: Research Foundations of the Bilingual Education Act.* .

Dabach, D. B. (2014). "I am not a shelter!": Stigma and social boundaries in teachers' accounts of students' experience in separate "sheltered" English learner classrooms. *Journal of Education for Students Placed at Risk 19*(2), 98-124.

de Jong, E. J. (2002). Effective bilingual education: From theory to academic achievement in a two-way bilingual program. *Bilingual Research Journal*, *26*(1), 65-84.

Delpit, L. (1995). *Other people's children: Cultural conflict in the classroom*. The New Press.

Devereaux, M. D., & Palmer, C. C. (2019). *Teaching language variation in the classroom: Strategies and models from teachers and linguists*. Routledge.

Deyhle, D., & Swisher, K. (1997). Research in American Indian and Alaska Native education: From assimilation to self-determination. *Review of Research in Education*, *22*(1), 113-194.

Dinero, S. C. (2004). The politics of education provision in rural Native Alaska: The case of Yukon Village. *Race Ethnicity and Education*, *7*(4), 401-419.

Estrada, P. (2014). English learner curricular streams in four middle schools: Triage in the trenches. *The Urban Review*, *46*(4), 535-573.

Every Student Succeeds Act [ESSA] 114-95 C.F.R. (2015)

Flores, N., Phuong, J., & Venegas, K. M. (2020). "Technically an EL": The production of raciolinguistic categories in a dual language school. *Tesol Quarterly*, *54*(3), 629-651.

Flores, N., & Rosa, J. (2015). Undoing appropriateness: Raciolinguistic ideologies and language diversity in education. *Harvard Educational Review*, *85*(2), 149-171.

Garcia, O. (2009). Emergent bilinguals and TESOL: What's in a name? *TESOL Quarterly*, *43*(2), 322-326.

George, P. (2019). *Understanding High School English Learners' Chronic Absenteeism.* Unpublished doctoral dissertation, Seton Hall.

Hakuta, K. (2020). A policy history of leadership dilemmas in English learner education. *Leadership and Policy in Schools*, *19*(1), 6-9.

Hirshberg, D. (2008). "It was bad or it was good:" Alaska Natives in past boarding schools. *Journal of American Indian Education*, *47*(3), 5-30.

Hogan, M. P. (2008). The tale of two Noras: How a Yup'ik middle schooler was differently constructed as a math learner. *Diaspora, Indigenous, and Minority Education*, *2*(2), 90-114.

Hopkins, M., Lowenhaupt, R., & Sweet, T. M. (2015). Organizing English learner instruction in new immigrant destinations: District infrastructure and subject-specific school practice. *American Educational Research Journal*, *52*(3), 408-439.

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

Imbens, G., & Kalyanaraman, K. (2012). Optimal Bandwidth Choice for the Regression Discontinuity Estimator. *The Review of Economic Studies*, *79*(3), 933-959. https://doi.org/10.1093/restud/rdr043

Imbens, G. W., & Lemieux, T. (2008). Regression discontinuity designs: A guide to practice. *Journal of Econometrics*, *142*(2), 615-635. files/295/S0304407607001091.html

Indian Education Act, (1972). 20 U.S.C. Education.

Indian Self-Determination and Educational Assistance Act, (1975). 25 U.S.C. 14, § 530.

Jester, T. E. (2002). Healing the" unhealthy Native": Encounters with standards-based education in rural Alaska. *Journal of American Indian Education*, *41*(3), 1-21.

Jester, T. E., & Fickel, L. H. (2013). Cross-cultural field experiences in Alaska native villages: Implications for culturally responsive teacher education. *The Teacher Educator*, *48*(3), 185-200.

Johnson, A. (2019). The effects of English learner classification on high school graduation and college attendance. *AERA Open*, *5*(2), 1-23.

Johnson, A. (2020). The impact of English learner reclassification on high school reading and academic progress. *Educational Evaluation and Policy Analysis*, *42*(1), 46-65.

Jones, K., & Ongtooguk, P. (2002). Equity for Alaska natives: Can high-stakes testing bridge the chasm between ideals and realities? *Phi Delta Kappan*, *83*(7), 499-550.

Kanno, Y., & Kangas, S. E. (2014). "I'm not going to be, like, for the AP" English language learners' limited access to advanced college-preparatory courses in high school. *American Educational Research Journal*, *51*(5), 848-878.

Krauss, M. (1996). Status of Native American language endangerment. *Stabilizing indigenous languages*, 16-21.

Krauss, M. (2007). Status of Native American language endangerment. In G. Cantoni (Ed.), *Stabilizing indigenous languages, A Center for Excellence in Education Monograph* (pp. 16-21). Northern Arizona University.

Krauss, M. (2007). Native Languages of Alaska. In O. Miyaoko, O. Sakiyama, & M. E. Krauss (Eds.), *The vanishing languages of the Pacific Rim* (pp. 406-417). Oxford University Press.

Leap, W. (2012). *American Indian English*. University of Utah Press.

Lee, M., & Soland, J. (2020). *Does English learner status change how students feel about school and themselves? Evidence from a regression discontinuity design* Association for Public Policy Analysis & Management Fall Research Conference, Virtual.

Lee, T. S. (2007). "If they want Navajo to be learned, then they should require it in all schools": Navajo teenagers' experiences, choices, and demands regarding Navajo language. *Wicazo Sa Review*, *22*(1), 7-33.

Liebler, C. A. (2010). Homelands and indigenous identities in a multiracial era. *Social Science Research*, *39*(4), 596-609.

Linquanti, R., & Cook, H. G. (2013). Toward a" Common Definition of English Learner": A Brief Defining Policy and Technical Issues and Opportunities for State Assessment Consortia. *Council of Chief State School Officers*.

Lipka, J., & Adams, B. (2004). Culturally based math education as a way to improve Alaska Native students' math performance. *Appalachian Collaborative Center for Learning*.

Lipka, J., & Ilutsik, E. (1995). Negotiated change: Yup'ik perspectives on indigenous schooling. *Bilingual Research Journal*, *19*(1), 195-207.

Lomawaima, K. T., & McCarty, T. L. (2002). When tribal sovereignty challenges democracy: American Indian education and the democratic ideal. *American Educational Research Journal*, *39*(2), 279-305.

Lomawaima, K. T., & McCarty, T. L. (2006). *" To Remain an Indian": Lessons in Democracy from a Century of Native American Education*. Teachers College Press.

McCarty, T., & Lee, T. (2014). Critical culturally sustaining/revitalizing pedagogy and Indigenous education sovereignty. *Harvard Educational Review*, *84*(1), 101-124.

McCarty, T. L. (2003). Revitalising Indigenous languages in homogenising times. *Comparative Education*, *39*(2), 147-163.

McCarty, T. L. (2008). American Indian, Alaska Native, and Native Hawaiian education in the era of standardization and NCLB—An introduction. *Journal of American Indian Education*, *47*(1), 1-9.

McCarty, T. L., Romero, M. E., & Zepeda, O. (2006). Reclaiming the gift: Indigenous youth counter-narratives on Native language loss and revitalization. *American Indian Quarterly*, *30*(1), 28-48.

McCarty, T. L., Romero-Little, M. E., Warhol, L., & Zepeda, O. (2009). Indigenous youth as language policy makers. *Journal of Language, Identity, and Education*, *8*(5), 291-306.

Menken, K. (2006). Teaching to the test: How No Child Left Behind impacts language policy, curriculum, and instruction for English language learners. *Bilingual Research Journal*, *30*(2), 521-546.

Montana Office of Public Instruction. (2020). *Language observation checklist sample*. Helena, MT: author.

Murnane, R. J., & Willett, J. B. (2010). *Methods matter: Improving causal inference in educational and social science research*. Oxford University Press, USA.

Murphy, M., & Johnson, A. (2020). Dual Identification? The Effects of English Learner Status on Special Education Placement. 2020 APPAM Fall Research Conference, Virtual.

National Advisory Council on Indian Education. (2016). *Annual report to congress*. Washington, DC: National Advisory Council on Indian Education.

National Indian Education Association. (n.d.). *Information on Native Students*. Retreived from: https://www.niea.org/native-education-research

Native American and Alaska Native Children in School Program, (2002).

Native American Languages Act, (1990). 25 U.S.C. ch. 31 § 2901 et seq

Nelson-Barber, S., & Trumbull, E. (2015). The Common Core initiative, education outcomes, and American Indian/Alaska Native students: Observations and recommendations. *Center on Standards and Assessments Implementation*.

Nichols, A. (2011). rd 2.0: Revised Stata module for regression discontinuity estimation. Retreived from: *http://ideas.repec.org/c/boc/bocode/s456888.html*

North Dakota Department of Public Instruction. (no date). *Home language survey*. Bismarck, ND: author.

Ochoa, G. L. (2013). *Academic profiling: Latinos, Asian Americans, and the achievement gap*. University of Minnesota Press.

Office of English Language Acquisition. (2020). *English Learners Who are American Indian/Alaska Native*. Office of English Language Acquisition, Washington DC.

Olsen, L. (2014). Meeting the unique needs of long term English language learners. *National Education Association*, *1*(1), 1-36.

Palmer, D., & Snodgrass Rangel, V. (2011). High stakes accountability and policy implementation: Teacher decision making in bilingual classrooms in Texas. *Educational Policy*, *25*(4), 614-647.

Paris, D., & Ball, A. (2011). African American Language in U.S. education and society: A story of success and failure. In Fishman, J. & Garcia, O. (Eds) *Handbook of language & ethnic identity: The success-failure continuum in language and ethnic identity efforts*.

Patrick, R. (2008). Perspectives on change: A continued struggle for academic success and cultural relevancy at an American Indian school in the midst of No Child Left Behind. *Journal of American Indian Education*, *47*(1), 65-81.

Pearson, B. Z., Conner, T., & Jackson, J. E. (2013). Removing obstacles for African American English-speaking children through greater understanding of language difference. *Developmental Psychology*, *49*(1), 31.

Pope, N. G. (2016). The marginal effect of K-12 English language development programs: Evidence from Los Angeles schools. *Economics of Education Review*, *53*, 311-328.

Quijada Cerecer, P. D. (2013). The policing of Native bodies and minds: Perspectives on schooling from American Indian youth. *American Journal of Education*, *119*(4), 591-616.

Regional Education Laboratory Northwest. (2019). *Native youth count: A resource guide for families of American Indian and Alaska Native students [Infographic]*. U.S. Department of Education, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Program.

Reyhner, J., & Hurtado, D. S. (2008). Reading first, literacy, and American Indian/Alaska native students. *Journal of American Indian Education*, *47*(1), 82-95.

Rickford, J. R. (2005). Using the vernacular to teach the standard. *Ebonics: The urban education debate*, *2*, 18-40.

Robinson, J. P. (2011). Evaluating criteria for English learner reclassification: A causal-effects approach using a binding-score regression discontinuity design with instrumental variables. *Educational Evaluation and Policy Analysis*, *33*(3), 267-292.

Romero-Little, M. E. (2010). How should young Indigenous children be prepared for learning? A vision of early childhood education for Indigenous children. *Journal of American Indian Education*, *49*(1), 7-27.

Romero-Little, M. E., McCarty, T. L., Warhol, L., & Zepeda, O. (2007). Language policies in practice: Preliminary findings from a large-scale national study of native american language shift. *TESOL Quarterly*, *41*(3), 607-618.

Ruiz Soto, A. G., Hooker, S., & Batalova, J. (2015). *States and districts with the highest number and share of English language learners.* Migration Policy Institute, Washington DC.

Russo, J. M., Williford, A. P., Markowitz, A. J., Vitiello, V. E., & Bassok, D. (2019). Examining the validity of a widely-used school readiness assessment: Implications for teachers and early childhood programs. *Early Childhood Research Quarterly*, *48*, 14-25.

Sabzalian, L. (2019). *Indigenous children's survivance in public schools*. Routledge.

Sandefur, G. D., & McKinnell, T. (1986). American Indian intermarriage. *Social Science Research*, *15*(4), 347-371.

Schultz, L. (2016). Resisting assimilation: Deliberate acculturation by the American English language learner. *Multicultural Perspectives*, *18*(2), 103-107.

Shin, N. (2018). The effects of the initial English language learner classification on students' later academic outcomes. *Educational Evaluation and Policy Analysis*, *40*(2), 175-195.

Siebens, J., & Julian, T. (2011). Native North American languages spoken at home in the United States and Puerto Rico: 2006–2010. *American Community Services Briefs*, *10*(10), 1-5.

Siekmann, S., Webster, J. P., Samson, S. A. a., & Moses, C. K. (2017). Teaching our way of life through our language: Materials development for Indigenous immersion education. *Cogent Education, 4*(1), 1362887.

Slama, R. (2014). Investigating whether and when English learners are reclassified into mainstream classrooms in the United States: A discrete-time survival analysis. *American Educational Research Journal*, *51*(2), 220-252.

Smallwood, B. A., Haynes, E. F., & James, K. (2009). *English language acquisition and Navajo achievement in Magdalena, New Mexico: Promising outcomes in heritage language education*. Center for Applied Linguistics.

Smith, P. (2016). A distinctly American opportunity: Exploring non-standardized English (es) in literacy policy and practice. *Policy Insights from the Behavioral and Brain Sciences*, *3*(2), 194-202.

Snyder, T. D., De Brey, C., & Dillow, S. A. (2019). Digest of Education Statistics 2017, NCES 2018-070. *National Center for Education Statistics*.

Solano-Flores, G. (2006). Language, dialect, and register: Sociolinguistics and the estimation of measurement error in the testing of English language learners. *Teachers College Record*, *108*(11), 2354.

Spring, J. (2016). *Deculturalization and the struggle for equality: A brief history of the education of dominated cultures in the United States*. Routledge.

Sullivan, A. L. (2011). Disproportionality in special education identification and placement of English language learners. *Exceptional Children*, *77*(3), 317-334.

Thompson, C. (1984). *Athabaskan Languages and the Schools*. Alaska Native Language Center.

Thompson, K. D. (2015). Questioning the Long-Term English Learner Label: How Categorization Can Blind Us to Students' Abilities. *Teachers College Record*, *117*(12), n12.

Thompson, K. D. (2017a). English learners' time to reclassification: An analysis. *Educational Policy*, *31*(3), 330-363.

Thompson, K. D. (2017b). What blocks the gate? Exploring current and former English learners' math course-taking in secondary school. *American Educational Research Journal*, *54*(4), 757-798.

U.S. Department of Education. (2019). *Table 2030.70: Percentage distribution of enrollment in public elementary and secondary schools, by race/ethnicity and state or jurisdiction*. https://nces.ed.gov/programs/digest/d19/tables/dt19_203.70.asp

United States Census Bureau. (2019). *Custom Microdata Table: Ameican Community Survey 1-Year Estimates*.

United States Census Bureau. (2020). *Historical Population (1910-2010)*. Retrived from: https://www.census.gov/data/tables/time-series/dec/density-data-text.html

Valenzuela, A. (1999). Subtractive Schooling: US-Mexican youth and the politics of caring. SUNY Series. *The Social Context of Education*.

Villegas, L. (2020). *Ever-present, but unexpected: Native American English learners*. N. America. https://www.newamerica.org/education-policy/edcentral/ever-present-unexpected-native-american-english-learners

Washington Superintendent of Public Instruction. (2017). *Identifying English language learners: Definitions and procedures*. Olympia, WA: author.

What Works Clearinghouse (2020). *What Works Clearinghouse Standards Handbook, Version 4.1.* Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance.

Wheeler, P., & Thornton, T. (2005). Subsistence research in Alaska: A thirty year retrospective. *Alaska Journal of Anthropology*, *3*(1), 69-103.

Wheeler, R. S. (2006). "What Do We Do about Student Grammar--All Those Missing-'ed's' and-'s's'?" Using comparison and contrast to teach standard English in dialectally diverse classrooms. *English Teaching: Practice and Critique*, *5*(1), 16-33.

Wiley, T. G., & Lukes, M. (1996). English-only and standard English ideologies in the US. *TESOL Quarterly*, *30*(3), 511-535.

Williams, B., & Rearden, N. (2006). Yup'ik language programs at Lower Kuskokwim School District, Bethel, Alaska. *Journal of American Indian Education*, *45*(2), 37-41.

Winford, D. (1997). On the origins of African American Vernacular English—A Creolist perspective: Part I: The sociohistorical background. *Diachronica*, *14*(2), 305-344.

Winstead, T., Lawrence, A., Brantmeier, E. J., & Frey, C. J. (2008). Language, sovereignty, cultural contestation, and American Indian schools: No Child Left Behind and a Navajo test case. *Journal of American Indian Education*, *47*(1), 46-64.

Wong Fillmore, L. (1996). What happens when languages are lost? An essay on language assimilation and cultural identity. In S. M. E.-T. Dan Isaac Slobin, Julie Gerhardt, Amy Kyratzis, Jiansheng Guo (Ed.), *Social Interaction, Social Context, and Language*.

Wyman, L., Marlow, P., Andrew, C. F., Miller, G., Nicholai, C. R., & Rearden, Y. N. (2010a). High stakes testing, bilingual education and language endangerment: A Yup'ik example. *International Journal of Bilingual Education and Bilingualism*, *13*(6), 701-721.

Wyman, L., Marlow, P., Andrew, F. C., Miller, G. S., Nicholai, R. C., & Rearden, N. Y. (2010b). Focusing on long-term language goals in challenging times: A Yup'ik example. *Journal of American Indian Education*, *45*(1), 28-49.

Supplemental Appendices

Appendix A

This appendix includes a description of the sensitivity and robustness checks included in this study. Unless otherwise noted, these checks were run for our primary research question (RQ1) which asked about the effect of EL classification on academic outcomes of Alaska Native kindergarten entrants. Sensitivity and robustness checks encompassed (a) alternative model and functional form specifications, (2) alterative samples including a placebo regression discontinuity, and (3) an alternative analytic approach and identification strategy. We discuss each in turn. Our main model, as described in the main text and determined through comparison of model fit, was a linear regression discontinuity with one slope parameter for both below and above threshold datapoints. To increase precision, the main model included student and school covariates, and cohort and district fixed effects.

Alternative model and functional form specifications

Linear model, no covariates. This model simply removed all student and school covariates as well as fixed effects from the main model. This represents a basic regression discontinuity model with only parameters for the running variable and the dichotomous indicator variable for whether a student scored within the EL threshold. Table F "no covariates" columns show results.

Linear model, below threshold slope only. Because the data only contain two points above the EL cut-score, this model clustered those above cut-score points together and included a slope term for the within EL datapoints only (i.e. below the threshold). We did this by replacing the above threshold running variable value with 0. Table F "no above-threshold slope" columns show results.

Quadratic model, shared slope. This model added a single quadratic slope term allowing the running variable to relate non-linearly to the outcome variable. Table F "quadratic slope" columns show results.

Linear model, different slopes. This model included an interaction term between the running variable and the treatment indicator variable, allowing for different linear slopes on either side of the cut-score. Table F "different slopes" columns show results.

Quadratic model, different slopes. This model added a quadratic running variable term as well as an interaction between the running variable and the treatment indicator. It did not include an interaction between the treatment indicator and the quadratic running variable because there a minimum of three data points above the threshold would be needed for this interaction to run. Table F "different slopes + quadratic" columns show results.

Growth model. This model embedded the regression discontinuity within a two-level growth model where the coefficient on the "below cut" variable represents the estimated impact of EL classification on math and ELA outcomes among Alaska Native students in 3rd grade and the coefficient on the "below cut * year" variable represents the estimated change in impact in each year after third grade through the fifth grade. Similar to the main model, this model included student and school covariates and district and cohort fixed effects. Table H shows results.

Alternative sample specifications

Single district. In order to evaluate whether results were being driven by a single district, this model ran the analyses with data from the one district that provided the largest number of students to the analytic sample. The main model was used with this alternative sample. Table G "largest district" columns show results.

Remaining districts. Sample sizes were too small from the remaining four districts to run models by individual district. Instead, this model clustered the students from all of the districts aside from the largest district. The main model was used with this alternative sample. Table G "all other districts" columns show results.

W-APT districts. In order to evaluate whether districts using one or the other screener assessments was driving the results, this model included only students who took the W-APT screener as their EL identification screener. There were not enough students to run a parallel model for students who took the MODEL screener. The main model was used with this alternative sample. Table G "all W-APT districts" columns show results.

Non-Alaska Native students. This model relates to research question 2 (RQ2), which asks how the effects of EL classification differ for Alaska Native compared to non-Alaska Native students. The primary model for RQ2 was a differences-in-regression discontinuity model. As a robustness check, we also ran a model that included only the non-Alaska Native sample. The main model was used with this alternative sample. Table G "non-Alaska Native students" columns show results.

Placebo RD. As a falsification check, we examined whether a treatment 'effect' occurred at a placebo threshold. We chose a placebo threshold of 1.5 standard deviations below the actual cut-score. This centered the placebo threshold in the relative middle of the sample distribution. The main model was used with this placebo threshold. Table I shows results.

Coarsened Exact Matching

The Coarsened Exact Matching (CEM) approach relies on researcher expertise to identify matching variables that are predictive of treatment or the outcome measured, then decide how to "coarsen" continuous variables into bins upon which observations are then matched (Iacus et al.,

2012). Weights are generated from the matching process; weighted data are then used in a regression framework to estimate the relationship between treatment and outcome. The key benefit of CEM is to reduce the sample to create more comparable treatment and control groups, although the assumptions required to believe the resulting estimates as causal are stringent—that there are no unobserved variables influencing the causal estimate. We match on and control for a rich set of covariates, including individual domains from an observational kindergarten readiness assessment of students' communication, language and literacy skills. In effect this means we are matching students who were classified as EL to those who were not but who had the same characteristics, including a set of five measures of language and literacy skills, the main determining factor for EL identification. Additional matching variables are described below. Still, our estimate is still subject to the threat of omitted variable bias if we have failed to account for all other factors influencing the outcome of interest. Importantly, we only use the sample of students who were initially identified as potential ELs, and require exact matches on each individual communication, language and literacy skill assessed upon kindergarten entry. However, we interpret our estimates with caution—not as standalone, causal estimates of the effect of EL classification, but as robustness checks and compliments to our RD estimates.

A second benefit of the CEM analyses is that results apply beyond those students who fall near the threshold for EL classification. Instead, results apply to the full matched sample. This is useful as it provides information about whether the results from the RD analyses may be applicable to students farther from the EL threshold. At the same time, it is important to keep in mind that the sample, and sample characteristics, are different for the RD and CEM analyses. Differences in results across the two sets of analyses may be due to analytic differences but could also be due to sample differences. While we cannot distinguish between the two, we believe the CEM results are

useful in both testing the robustness of our RD results and in thinking about possible EL classification effects farther from the EL threshold.

Using the sample of Alaska Native kindergarten-entrant students who took the EL screener, we required exact matches on students' kindergarten characteristics, including FRPL eligibility, special education identification, and their scores (scored 0-2) on each of the ADP kindergarten entry assessments' five communication, language and literacy domain goals (e.g., expressive communication skills and phonological awareness). The ADP is an observational tool that is completed by the student's teacher within the first weeks of their kindergarten entry. Each student had a score for each domain ranging from 0-2, where 0 indicates 'does not demonstrate', 1 indicates 'progressing', and 2 indicates 'consistently demonstrating' the indicated skills or behavior. Requiring exact matches on all the unique communication, language, and literacy assessment goals means that, of students identified as potential ELs, EL students are matched with non-EL students with the exact same standard English language and literacy profiles, as assessed by their teachers over a multi-week period upon entry into school. While we cannot match on English proficiency screener scores because it determines treatment, matching on Alaska's kindergarten assessment for all language and literacy domains allows us to identify strong matches on the key construct of interest—just using a different assessment approach. The correlation between the average score on these five domains and the initial ELP screener scores is lower than expected (0.36), yet this is not entirely surprising given that the kindergarten entry assessment is an observational tool, which could come to different conclusions than a direct one-time, high-stakes assessment even if measuring similar constructs (Russo et al., 2019). Despite the low correlation, we argue that an exact match on these domain scores is a strong way to account for student's initial language and literacy skills, and in fact, provide an important robustness check by

providing an alternative measure of our construct of interest. In the CEM approach, we include all variables that were used for matching as covariates in the model, as well as all other covariates included in the RD model other than the screener score.

The CEM samples were significantly smaller than the overall sample, although in cases larger than the RD bandwidth sample. Table J presents the descriptive statistics for the 3rd grade ELA and math full and matched samples. As seen in the Table J, a much larger proportion of EL-classified students (59%) were dropped in the matching process than non-EL students (18%). In the matched sample, EL-classified students had universally higher average ADP scores, and in the matched sample the percent of students identified as ever having a disability was much lower for both EL-classified and non-EL students. CEM results are reported in Table K, including the estimated effect of EL classification on student ELA, math, attendance, and special education identification for the matched sample, among Alaska Native students.

Appendix B

Table A: Outcome years included in the math and English language arts analysis, by kindergarten entry year

Kindergarten entry year	**Grade level**		
	3	4	5
2011-12			2016-17
2012-13		2016-17	2017-18
2013-14	2016-17	2017-18	2018-19
2014-15	2017-18	2018-19	
2015-16	2018-19		

Note: School year in the cells represent the school year that are included in the analysis for each grade.

Table B: Outcome school years included in the attendance and special education identification analysis, by kindergarten entry year

Kindergarten entry year	Grade level					
	K	1	2	3	4	5
2011-12	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
2012-13	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
2013-14	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
2014-15	2014-15	2015-16	2016-17	2017-18	2018-19	
2015-16	2015-16	2016-17	2017-18	2018-19		
2016-17	2016-17	2017-18	2018-19			
2017-18	2017-18	2018-19				
2018-19	2018-19					

Notes: School year in the cells represent the school year that are included in the analysis for each grade.

Table C: Enrollment and locale information about the districts included in the study sample

District Number	Enrollment in 208-19 school year	Percent free or reduced priced lunch	Percent Alaska Native	Percent EL	Percent EL who are Alaska Native	Locale	Screener assessment used
1	>10,000	25-50	0-10	<25	11-20	Urban or urban fringe schools	W-APT and MODEL
2	5,000-10,000	25-50	11-20	<25	11-20	Urban or urban fringe schools	MODEL
3	5,000-10,000	25-50	0-10	<25	11-20	Urban, urban fringe and rural hub schools	W-APT
4	<5,000	>75	>75	51-75	>75	Rural hub/fringe or rural remote schools	W-APT
5	<5,000	50-75	>75	25-50	>75	Rural remote schools	W-APT

Notes: Urban refers to larger cities such as Anchorage, Juneau, or Fairbanks. Urban fringe refers to on- and off-road communities either near an urban locale or with commercial air access. Rural-hub/fringe refers to rural-hub communities that may be off road, as well as rural-fringe communities, that are on the road system.
Rural remote refers to schools located in small communities in off-road areas that are accessible only by small plane and/or by boat (Vazquez Cano et al, 2019). W-APT = WIDA Access Placement Test; MODEL = Measure of Developing English Language.

Table D: Mean student characteristics among sample used in the attendance and disability status analysis, by Alaska Native classification and English Learner classification

Student Characteristics	Full Sample	Alaska Native		Not Alaska Native	
		EL	Not EL	EL	Not EL
Number of unique observations	2653	1964	162	465	62
Kindergarten EL screener assessment results (mean scores)					
W-APT oral composite score	18.29	17.24	26.71	19.55	27.78
MODEL oral composite score	2.74	2.47	6.00	2.54	4.97
Alaska Development Profile (ADP) kindergarten measures (mean scores)					
Receptive communication	1.36	1.34	1.61	1.34	1.67
Expressive communication	1.16	1.13	1.49	1.11	1.55
Phonological awareness	1.00	0.96	1.25	1.04	1.60
Print concepts	1.07	1.03	1.34	1.12	1.66
Letters and symbols	1.11	1.04	1.37	1.25	1.69
# of areas child rated a 2 (out of 13)	5.08	4.79	7.30	5.18	8.33
Demographic and special program participation (percent)					
Ever FRPL	0.82	0.88	0.72	0.62	0.55
Male	0.51	0.51	0.49	0.51	0.55
Attendance rates					
Kindergarten	87	87	88	91	92
Grade 1	90	90	90	92	92
Grade 2	91	91	91	92	95
Grade 3	92	92	93	93	94
Grade 4	92	92	93	93	94
Grade 5	92	92	93	93	94
Disability status (percent of students)					
Ever identified with a disability	14	14	10	18	16
Kindergarten	8	8	6	10	10
Grade 1	9	9	5	10	11
Grade 2	9	9	7	10	14
Grade 3	11	11	8	12	12
Grade 4	11	10	7	15	14
Grade 5	12	12	8	15	0

Note: Alaska Development Profile kindergarten measures are scored on a scale from 0 to 2. Alaska Development Profile (ADP) kindergarten measures are scored on a scale from 0 to 2 where 0 indicates 'does not demonstrate', 1 indicates 'progressing', and 2 indicates 'consistently demonstrating' the indicated skills or behavior. FRPL = Free/reduced price lunch eligible.

Table E: Estimated effect of EL classification on baseline observable characteristics

Variable	ADP: Receptive communication skills	ADP: Expressive communication skills	ADP: Phonological awareness	ADP: Print Concepts	ADP: Letters and symbols	ADP: Mean number rated 2	Ever economically-disadvantaged	Male
Running	0.17**	0.16*	0.20**	0.32***	0.35***	1.87***	-0.001	-0.10
	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	(0.48)	(0.03)	(0.05)
Below cut	-0.0242	-0.139	-0.04	0.0260	0.0646	-0.01	0.13**	-0.17*
	(0.09)	(0.09)	(0.11)	(0.10)	(0.11)	0.70	(0.05)	(0.08)
Observations	539	539	539	539	539	539	559	559
R-squared	0.026	0.041	0.028	0.057	0.057	0.046	0.024	0.010

Notes: Standard errors in parenthesis. Sample was restricted to students within a bandwidth of 1.5 in the standardized screener score. ADP = Alaska Development Profile assessment, Alaska's kindergarten readiness assessment.
* p<0.05, ** p<0.01, *** p<0.001

Table F: Regression discontinuity results of the impact of EL classification on math and ELA scores in 3rd grade among Alaska Native students, alternative model and functional form specifications

	Main model		No covariates		No above-threshold slope		Quadratic slope		Different slopes		Different slopes + quadratic	
	Math	ELA	Math	ELA	Math	ELA	Math	ELA	Math	ELA	Math	ELA
Below Cut	-0.397**	-0.267**	-0.478***	-0.318***	-0.410**	-0.279**	-0.161	-0.117	-0.369**	-0.237**	-0.175	-0.119
	(0.098)	(0.072)	(0.079)	(0.053)	(0.093)	(0.063)	(0.115)	(0.074)	(0.101)	(0.072)	(0.110)	(0.072)
N	432	432	432	432	432	432	432	432	432	432	432	432
Adj. R-sq	0.213	0.143	0.087	0.071	0.244	0.177	0.217	0.144	0.211	0.141	0.215	0.142
AIC	810	797	830	830	808	795	807	796	810	797	807	796

~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses. All models are described in appendix A.

Table G: Regression discontinuity results of the impact of EL classification on math and ELA scores in 3rd grade, for alternative samples

	Largest district (Alaska Native students)		All other districts (Alaska Native students)		All W-APT districts (Alaska Native students)		Non-Alaska Native students	
	Math	ELA	Math	ELA	Math	ELA	Math	ELA
Below Cut	-0.280*	-0.196*	-.539	-.353	-0.392**	-0.254**	0.083	0.229
	(0.107)	(0.084)	(0.338)	(0.369)	(0.093)	(0.083)	(0.185)	(0.164)
N	355	355	77	77	432	432	71	71
adj. R-sq	0.199	0.134	0.504	0.321	0.215	0.138	0.216	0.348

~ p<0.10 , * p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses. All models are described in appendix A.

Table H: Regression discontinuity results of the impact of EL classification on math and ELA scores in 3rd through 5th grade, using a two-level growth model

	Math			ELA		
	BW=.5	1	1.5	0.5	1	1.5
Running	0.640**	**0.371*** **	0.070	0.678**	**0.317** **	0.107~
	(0.213)	**(0.084)**	(0.068)	(0.208)	**(0.097)**	(0.064)
Below Cut	-0.068	**-0.202** **	-0.371***	-0.000	**-0.170***	-0.289***
	(0.100)	**(0.063)**	(0.076)	(0.107)	**(0.076)**	(0.073)
Year	-0.151***	**-0.152*** **	-0.163***	-0.054	**-0.058**	-0.060
	(0.035)	**(0.038)**	(0.047)	(0.109)	**(0.081)**	(0.089)
Running * Year	0.390*	**0.047**	0.006	0.174	**0.095**	0.034
	(0.179)	**(0.100)**	(0.041)	(0.335)	**(0.089)**	(0.024)
Below Cut * Year	0.279***	**0.199** **	0.193**	0.124	**0.116**	0.090
	(0.070)	**(0.070)**	(0.061)	(0.159)	**(0.088)**	(0.087)
Student covariates	X	**X**	X	X	**X**	X
School covariates	X	**X**	X	X	**X**	X
Cohort FE	X	**X**	X	X	**X**	X
District FE	X	**X**	X	X	**X**	X
N	401	**767**	1172	401	**767**	1172
Joint test	32.39***	**13.34** **	30.45***	1.16	**9.19***	20.82***

~ p<0.10 * p<0.05 ** p<0.01 *** p<.001; Standard errors in parentheses. Model described in appendix A.

Table I: Regression discontinuity results of the impact of EL classification on math and ELA scores in grade 3 to grade 5 using a placebo cut score

	Grade 3			Grade 4			Grade 5		
Bandwidth	1	**1.5**	2	1	**1.5**	2	1	**1.5**	2
Math									
Placebo cut-score	-0.083	**-0.038**	0.027	-0.052	**-0.021**	0.019	-0.118	**-0.084**	-0.075
	(0.096)	**(0.096)**	(0.111)	(0.096)	**(0.088)**	(0.095)	(0.108)	**(0.081)**	(0.079)
N	512	**722**	782	485	**683**	735	468	**661**	708
Adj. R-sq	0.033	**0.063**	0.094	0.012	**0.033**	0.051	0.017	**0.036**	0.044
ELA									
Placebo cut-score	-0.030	**-0.002**	0.024	-0.054	**-0.038**	0.024	-0.071	**0.006**	0.057
	(0.072)	**(0.069)**	(0.081)	(0.083)	**(0.068)**	(0.084)	(0.083)	**(0.060)**	(0.084)
N	512	**722**	782	485	**683**	735	468	**661**	708
Adj. R-sq	0.034	**0.072**	0.090	0.027	**0.056**	0.090	0.012	**0.053**	0.082

Note. Placebo cut-score set 1.5 standard deviations below actual cut-score. Model described in appendix A.

Table J: Student descriptive statistics for 3rd grade math and ELA regression discontinuity main bandwidth sample, full unmatched sample, and matched sample

	Regression Discontinuity (Main Bandwidth, 1.5 SD)		Full Unmatched		Matched	
	EL	Not EL	EL	Not EL	EL	Not EL
Alaska Native	0.87	0.76	0.88	0.75	0.94	0.77
Ever identified with a disability	0.06	0.11	0.13	0.17	0.04	0.08
Ever FRPL	0.92	0.76	0.93	0.78	0.93	0.79
Male			0.50	0.52	0.35	0.48
Migrant	0.23	0.22	0.20	0.24	0.2	0.25
ADP						
Receptive communication skills	1.52	1.69	1.39	1.63	1.57	1.69
Expressive communication skills	1.37	1.66	1.20	1.58	1.45	1.61
Phonological awareness	1.19	1.40	1.01	1.34	1.29	1.43
Print Concepts	1.24	1.56	1.08	1.50	1.34	1.56
Letters and symbols	1.28	1.53	1.10	1.46	1.32	1.49
N	448	74	816	76	332	61

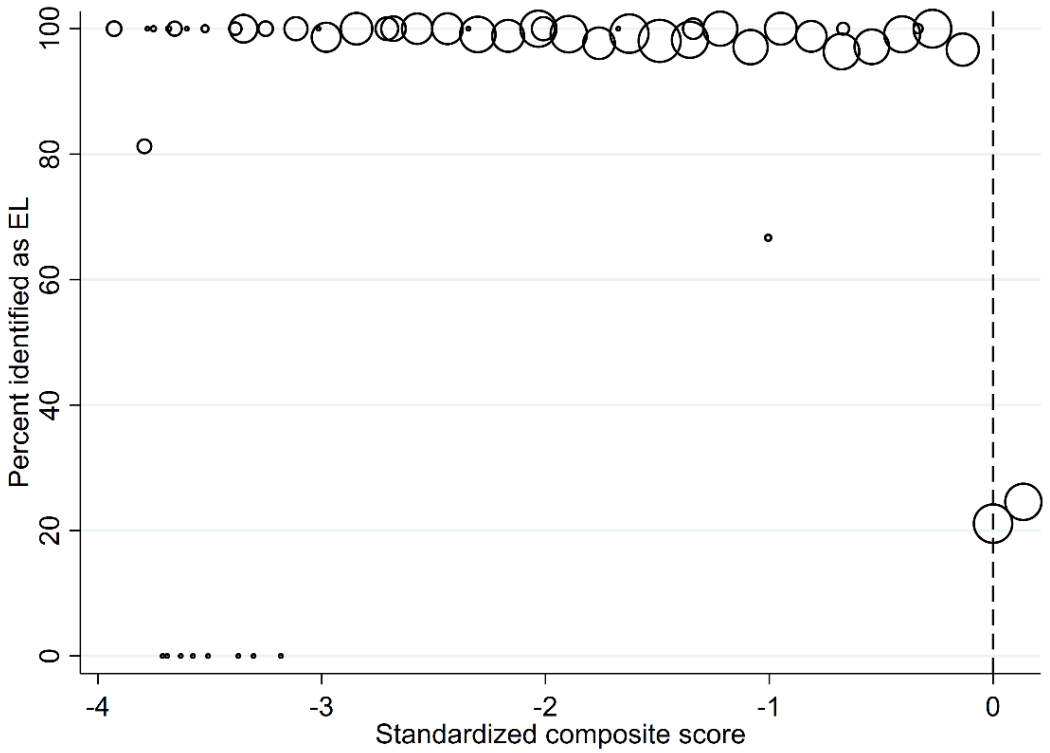
Note. Alaska Development Profile (ADP) kindergarten measures are scored on a scale from 0 to 2 where 0 indicates 'does not demonstrate', 1 indicates 'progressing', and 2 indicates 'consistently demonstrating' the indicated skills or behavior. SD = standard deviation. ELA = English language arts. FRPL= eligible for free/reduced price lunch.

Table K: Coarsened exact matching estimated effects of EL classification on math, ELA, attendance, and disability identification outcomes for Alaska Native students in matched sample

	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Math						
EL classification				-0.15	-0.02	0.02
				(0.10)	(0.10)	(0.11)
N				359	309	270
ELA						
EL classification				-0.29**	-0.17~	-0.20*
				(0.09)	(0.09)	(0.10)
N				359	309	270
Attendance						
EL classification	-0.01	0.00	-0.02~	-0.02*	-0.01	-0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
N	1,248	1,092	864	620	436	273
Disability identification						
EL classification	0.02	0.01	0.02	-0.02	0.00	0.01
	(0.02)	(0.00)	(0.02)	(0.03)	(0.04)	(0.05)
N	1,360	1,178	921	681	495	310
Student covariates	X	X	X	X	X	X
School covariates	X	X	X	X	X	X
Cohort FE	X	X	X	X	X	X

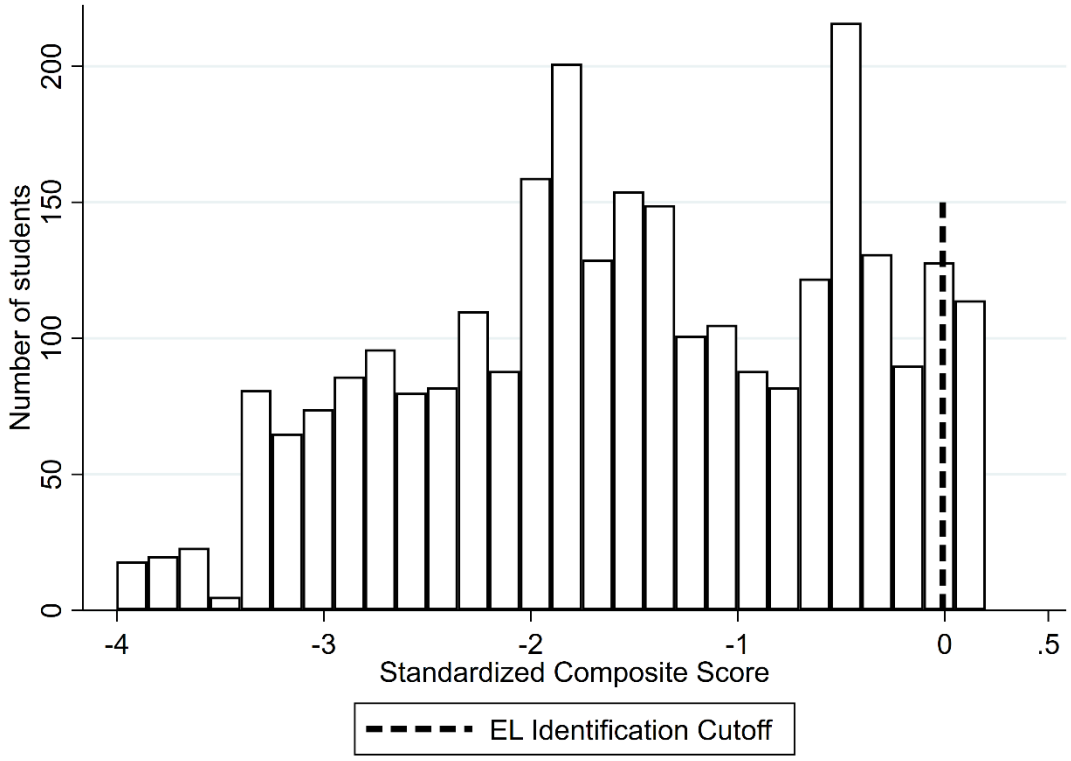
Note. EL = English learner. ELA = English language arts. FE = Fixed effects. Standard errors in parentheses.
~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Model described in appendix A.

Figure A: Proportion of students classified as an English learner by standardized composite score



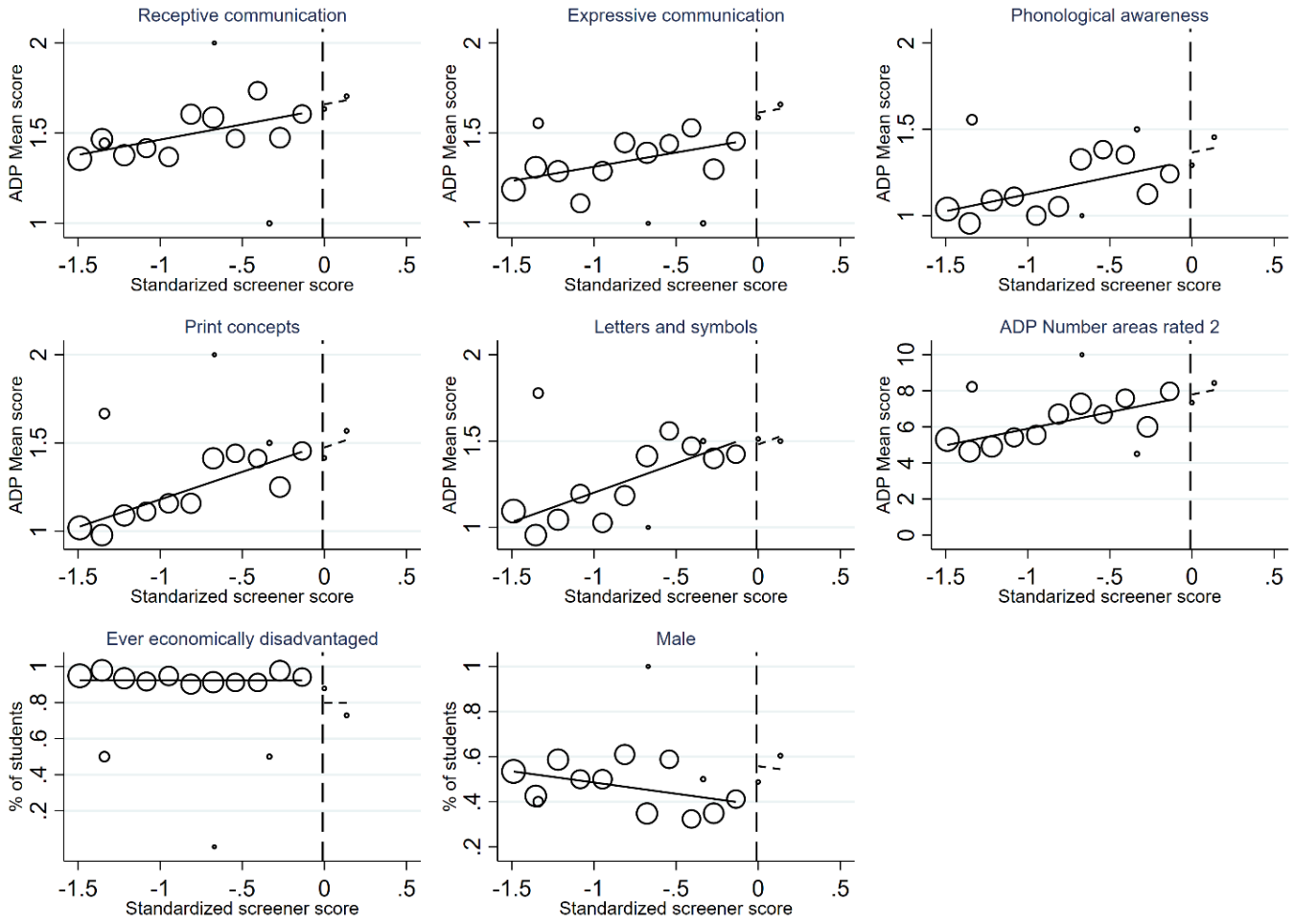
Note. This figure shows the proportion of students classified as an English Learners at each standardized score value. Size of the circles represents the number of students represented at each value. The larger the circle, the more observed student at each value. The EL identification cutoff is represented by the vertical dashed line.

Figure B: Frequency of students in the sample by standardized composite score



Note. This figure presents the number of students at each standardized composite score bin. The EL identification cutoff is represented by the vertical dashed line.

Figure C: Mean observable student characteristic by distance from the standardized English learner classification threshold



Note. The circle in each panel of the figure represents the mean value of the student characteristics at each standardized score unit. Size of the circles represents the number of students represented at each value. The larger the circle, the more observed student at each value. The line is a linear regression line fitted to the values. The vertical dashed line denotes the English learner classification threshold.