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State-Funded Preschool in the Last Frontier: Alaska's Pre-Elementary Grant Program

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Photo credit: KinderReady Preschool, Juneau, Alaska

State-Funded Preschool in the Last Frontier: Alaska's Pre-Elementary Grant Program

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Created in 2016, Alaska's Pre-Elementary Grants (PEGs) allow school districts to design, develop, and expand affordable and accessible preschool in their communities. PEGs aim, in particular, to serve historically disadvantaged students. This study aimed to help Alaska stakeholders better understand how districts implemented the grants and what were the characteristics and outcomes of children who participated in PEG programs. Based on analyses of documents, interviews, and administrative data, the study found that PEG districts served a higher proportion of Alaska Native students, English learner students, and students in rural remote schools than did non-PEG districts and that these differences increased between 2016/17 and 2018/19 as more districts received funding. PEG districts used the program's flexibility primarily to provide or support part-day preschool. In addition, students' participation in state-funded preschool between 2013/14 and 2017/18, including PEG participation, was positively related to kindergarten readiness, kindergarten and grade 2 English language proficiency, kindergarten and grade 1 attendance, and grade 3 assessment scores in math but not to grade 3 assessment scores in reading. The study findings have important implications for Alaska's efforts to expand preschool and might also be of interest to other predominantly rural states that are considering similar efforts. Specifically, the implementation findings can help practitioners, program directors, and state agency staff members in Alaska provide more targeted support to districts and modify the grant program in future years. The promising findings on the relationship between PEG participation and student outcomes point to the need for more rigorous research on this topic—an effort that would benefit from improved data collection.

Why this study?

About 36 percent of 3- and 4-year-old children in Alaska participate in early education, a rate that is well below the national average of 48 percent (Annie E. Casey Foundation, 2019). Access to early education, which includes Head Start, public and private preschools, and licensed child care programs, varies widely in Alaska based on geography. Urban communities, such as Anchorage, offer more opportunities for children to attend programs taught by licensed professionals than do rural and remote communities (Malik et al., 2018).

Many studies suggest a positive relationship between participation in early education and student outcomes. Barnett (2008) found that attending preschool can lead to positive long-term outcomes, such as higher test scores and lower grade repetition. The evidence suggests that the effects of preschool attendance are strongest for economically disadvantaged children. Studies of several state-funded preschool programs in Arkansas, New Jersey, North Carolina, and Tennessee provide evidence of positive effects of preschool participation on early literacy and math skills (Hustedt et al, 2007; Lamy et al., 2005; Lipsey et al., 2015; Peisner-Feinberg, 2014). However, some studies have concluded that the benefits of early education fade, often by grade 3, as demonstrated by test scores (Barnett & Carolan, 2014; Puma et al., 2012).

Despite the evidence on the positive effects of preschool, implementing a high-quality preschool program statewide in Alaska has proven challenging, as quality control can be particularly difficult to establish and maintain in Alaska, with its vast geographic distances and remote communities (Farran & Bilbrey, 2014). Alaska, one of the 44 states with state preschool programs in 2018/19, met

For additional information, including background on the study, technical methods, supporting analyses, and interview and document analyses, see the appendices for the report on the Institute of Education Sciences website.

only one of the National Institute for Early Education Research's 10 preschool quality standards, which include staff–child ratio and teacher training requirements (Friedman-Krauss et al., 2020).

The Alaska Department of Education & Early Development (DEED) created Pre-Elementary Grants (PEGs) in 2016 to develop and expand locally designed preschool options (see appendix A for information about how the grants are structured). PEGs seek "to promote school [kindergarten] readiness and positive outcomes for participating children" (Alaska Department of Education & Early Development, n.d.). A key goal of the PEGs is to serve children in need of support, although the state does not restrict program enrollment to students with specific characteristics.

A hallmark of PEGs is the flexibility they provide to districts in designing and implementing preschool programs that meet the needs of local communities. Earlier iterations of state-funded preschool programs, carried out from 2009/10 to 2010/11 and from 2012/13 to 2015/16, provided less flexibility. PEG funding was first provided in 2016/17, and all districts that received grants in 2016/17 also received grants in 2017/18 and 2018/19 (see figure A1 and table A1 in appendix A). DEED did not establish quality standards—such as minimum professional development hours, participation in a quality improvement system, or staff–child ratios—for PEG-recipient districts but rather sought to improve preschool access statewide (Friedman-Krauss et al., 2020).

In 2018/19 PEGs were the only mechanism through which DEED directly funded preschool services (Friedman-Krauss et al., 2020). In 2016/17 PEG and *Moore v. Alaska* settlement funding were available, while PEG and *Moore* bridge grant funding were available in 2017/18 (Pierson et al., 2018).[1] All 24 Alaska school districts that applied for a 2018/19 PEG received funds, representing slightly less than half of the 53 school districts in the state with elementary school programs.[2] Most PEG districts used multiple sources to fund their preschool program. Some districts that received PEGs partnered with a local Head Start program to provide preschool services.

As of 2018/19 there were 15 Head Start programs in the state (Alaska Department of Education & Early Development, n.d.), as well as 167 licensed child care centers, 77 large home-based care providers, and 210 small home-based care providers that served 3- and 4-year-old children (Alaska Department of Health and Social Services, 2020). However, 29 school districts had no licensed preschool providers in 2018/19 (excludes PEGs, which are not licensed by the Alaska Department of Health and Social Services; Alaska Department of Health and Social Services, 2020). Eleven of the 29 districts operated PEG programs, indicating that for families in those 11 districts, PEG programs were the only preschool option.

DEED partnered with the Regional Educational Laboratory (REL) Northwest on this study to help Alaska education stakeholders understand local PEG district and student characteristics, how PEG programs are implemented, and the relationship between participation in Alaska state-funded preschool programs (including PEG programs) and kindergarten readiness. The findings also provide actionable data that Alaska policymakers and PEG program directors can use to make evidence-based decisions about future funding and program implementation. The report adds to the national literature on implementation of locally designed preschool programs and the relationship of these programs to student outcomes, particularly in rural or small communities. It also presents examples of how rural communities can implement preschool, which can inform other states or rural communities interested in implementing a preschool program.

1. In addition to the PEG programs funded by DEED, other agencies in Alaska provide some support for licensed child care programs through the Alaska Child Care Assistance Program and the Child Care Grant Program. *Moore v. Alaska* settlement funding refers to a legal settlement under which the state provided funding for teacher retention, preschool, and other programs in select schools.
2. Alaska has 54 school districts, but 1 district, which is a boarding school for grades 9–12, has no elementary school programs.

Research questions

This study addressed the following research questions:

1. To what extent did Alaska PEG districts and PEG programs serve historically disadvantaged children from 2016/17 to 2018/19?

2. How did districts that received PEG funding in 2018/19 implement their preschool programs?

3. What was the relationship between participation in Alaska's state-funded preschool programs (PEG participation in 2016/17–2017/18 and participation in earlier state-funded preschool in 2013/14, 2014/15, and 2015/16) and student outcomes (kindergarten readiness, kindergarten–grade 2 English language proficiency, kindergarten–grade 3 attendance, and grade 3 standardized assessment scores in math and reading)?

    a. How did the relationship vary by race/ethnicity, economically disadvantaged status, English learner student status, and Individualized Education Program (IEP) status?

Information on the characteristics of PEG districts and students participating in PEG programs (research question 1) will help Alaska policymakers determine whether the program is meeting its goal of serving the students most in need of support. Data on the implementation of PEG programs (research question 2) will help Alaska policymakers understand the unique challenges and options related to implementing locally designed preschool programs. Findings on the relationship between participation in Alaska's state-funded preschool programs and specific outcomes (research question 3) will help the state make decisions about future funding.

The key terms used in the report are defined in box 1.

Box 1. Key terms

Economically disadvantaged. Students eligible for the National School Lunch Program or identified by their school based on family income or categorical eligibility (migrant, runaway, homeless, or foster care; Alaska Department of Education & Early Development, 2017). This study included students identified as economically disadvantaged in kindergarten.

Historically disadvantaged. Students who belong to groups that face systematic obstacles to educational achievement. This study defines historically disadvantaged students as Alaska Native students, economically disadvantaged students, English learner students, students with an Individualized Education Program, and students in rural remote schools. These groups may be prioritized for enrollment in PEG programs, as a key program goal is serving the students most in need of support.

Individualized Education Program (IEP). A plan or program for providing specific instruction or services to students with identified disabilities.

Kindergarten readiness. A measure of the skills and behaviors of incoming kindergarten students in Alaska, assessed through the state's kindergarten entry assessment, the Alaska Developmental Profile (ADP). Although the ADP has not been validated as an instrument, it is currently the only state measure for kindergarten readiness.

Pre-Elementary Grants (PEGs). Grants for Alaska school districts to design, develop, and expand locally designed preschool options across the state. The Alaska Department of Education & Early Development (DEED) first funded the grants in 2016. In 2018/19, 24 Alaska school districts received PEGs.

PEG districts. School districts that received PEGs from DEED to design, develop, and expand a local preschool program.

PEG programs. Alaska preschool programs designed, developed, and expanded by each school district that received a PEG.

PEG students. Kindergarten students in this study who participated in a PEG program the previous year.

School locale. The study used Alaska-specific locale designations developed by the Regional Educational Laboratory Northwest (Vazquez Cano et al., 2019). The designations are based on National Center for Education Statistics locale classifications (U.S. Department of Education, 2006), combined with road access information and stakeholder feedback. *Urban* refers to larger cities, such as Anchorage, Fairbanks, and Juneau; *urban fringe* refers to communities near an urban locale or with commercial air access, such as Palmer and Sitka; *rural hub/fringe* refers to either rural-hub (for example, Bethel) or rural communities on the road system (for example, Healy); *rural remote* refers to small communities in off-road areas accessible only by small plane or boat (for example, the Pribilof Islands).

The data sources, sample, and analytic methods used for this study are in box 2. Additional information about the data sources, sample, and analytic methods is in appendix B.

Box 2. Data sources, sample, and methods

Data sources. This study used data from three sources:

- Documents submitted to Alaska's Department of Early Learning & Development (DEED) by the 24 districts that received a Pre-Elementary Grant in 2018/19 (see appendix B). The documents included grant applications, budgets, and strategic plans from 2016/17, 2017/18, and 2018/19.
- Interviews with PEG program directors in nine PEG districts in 2019.
- DEED administrative data on student characteristics and outcomes, as well as school characteristics (such as urban or rural locale), from the 53 districts in the state with elementary school grades. In any given year student-level PEG participation data were available from all but two or three districts.

Sample. The study team analyzed documents submitted to DEED from all 24 PEG districts. However, documents were not uniform across districts (2 districts did not have budgets, and 12 did not have strategic plans, although all had grant applications; see appendix B). The study team also selected program directors from nine PEG districts for interviews, based on district geography, student demographic characteristics, program structure, and program implementation status (development or renewal grant) to represent the variation within the 24 districts. For the administrative data the study sample included students during 2014/15–2018/19 (approximately 10,000 kindergarten students statewide each year, with 589–1,339 PEG participants depending on the year; see tables B3 and B5 in appendix B). The study focused on kindergarten cohorts, as preschool data were not available for students who did not participate in a PEG program the previous year. Thus, findings for the 2014/15–2018/19 kindergarten cohorts relate to PEG programs during 2013/14–2017/18.

Methods. For research question 1 the study team analyzed administrative data and calculated descriptive statistics, such as kindergarten student characteristics averaged across PEG and non-PEG districts, as well as characteristics of kindergarten students in PEG districts who participated in a PEG program and those who did not. The report highlights differences in descriptive statistics of 3 percentage points or greater between PEG and non-PEG districts and students. Among PEG districts, only districts that reported five or more PEG students were included in the analysis, resulting in the exclusion of two PEG districts in 2016/17 and three districts each in 2017/18 and 2018/19. Because Anchorage enrolled 36 percent of all kindergarten students in 2018/19—more than twice as many students as any other district—the study team also calculated statistics that excluded Anchorage to see whether results for Anchorage differed from overall results.

For research question 2 the study team reviewed the grant documents for all 24 PEG districts and coded the documents to identify key themes related to program features, goals, successes, and challenges. The team then conducted interviews with the directors of nine 2018/19 PEG programs to support the document analyses and to obtain additional detail. After the interviews the study team organized interview data according to the themes found in the document analysis and additional themes that emerged from the interviews.

For research question 3 the study team conducted regression analyses of the relationship between participation in state-funded preschool, including participation in PEG and prior state-funded preschool programs, and student outcomes (kindergarten readiness, kindergarten–grade 2 English language proficiency, kindergarten–grade 3 attendance, and grade 3 standardized assessment scores in math and reading). A separate analysis for each kindergarten cohort year was conducted that controlled for student demographic characteristics, school attended, and prior outcomes, when data were available (for example, when analyzing the

outcome of grade 1 English language proficiency, kindergarten English language proficiency was included in the model). To explore the relationship between state-funded preschool and outcomes in grades 2 and 3 (such as grade 3 standardized assessment scores), the study team conducted separate analyses for the kindergarten cohorts of 2014/15, 2015/16, and 2016/17 that had access to state-funded preschool programs. For all analyses the study team estimated the relationship for all PEG districts reporting five or more students in state-funded preschool for districts including Anchorage, excluding Anchorage, and for Anchorage alone. The study team also explored differences in the relationship between participation in state-funded preschool and student outcomes for certain student groups (Alaska Native students compared with non–Alaska Native students, students who received English learner services compared with those who did not, students who had an Individualized Education Program compared with those who did not, and students who were economically disadvantaged students compared with those who were not).

Limitations. The interviews focused more on PEG program descriptions than on how districts used PEG funding. Also, some program directors were not able to report what was specifically funded by the PEG. Another limitation is that families that chose to send their children to a PEG preschool likely differed from other families in ways that are not measured by existing data. This means that the results of analyses for research question 3 could be attributed partly to family differences. This study does not provide causal evidence of the effect of participation in state-funded preschool on student outcomes. Also, the students in kindergarten cohorts who did not participate in a PEG program might have attended other preschool programs, such as Head Start or a licensed child care center, but these data were not available. Related to kindergarten readiness, the Alaska Developmental Profile has not been studied for reliability and validity. In addition, data on student PEG participation was not systematically collected at the state level, and some districts did not submit records. Finally, the state does not have data on program quality.

Findings

This section presents findings on the characteristics of PEG districts and kindergarten students who participated in PEG programs, how the grants were implemented, and the relationship between participating in state-funded preschool (PEG as well as earlier programs) and student outcomes.

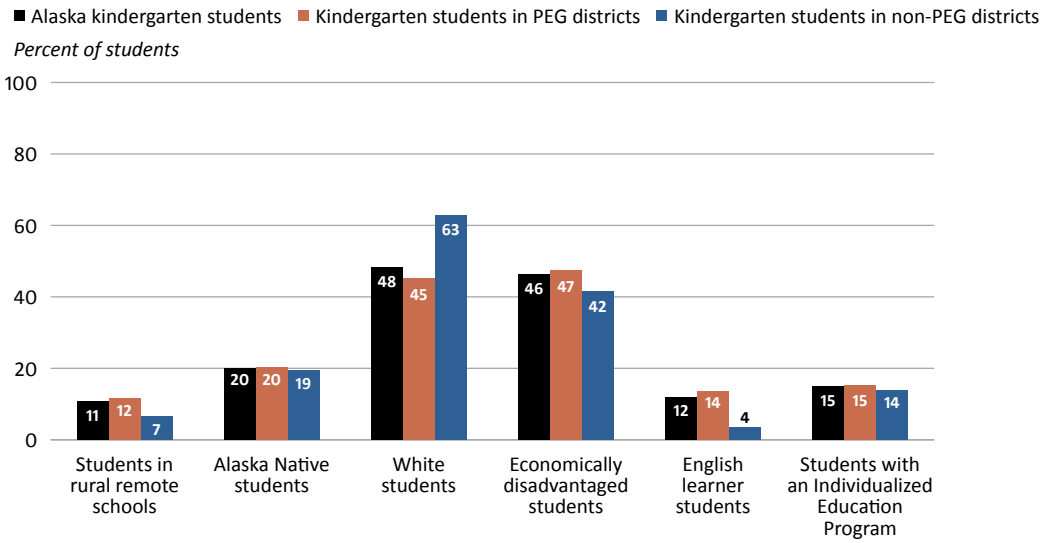
Pre-Elementary Grant districts were more likely to serve historically disadvantaged students in 2018/19

Districts that received Pre-Elementary Grants had higher concentrations of historically disadvantaged student groups than did other districts. The PEG program met one of its primary goals of providing support to the students who are most in need of it. Compared with non-PEG districts, PEG districts served a higher percentage of economically disadvantaged students (47 percent against 42 percent), a higher percentage of English learner students (14 percent against 4 percent), and a higher percentage of students in rural remote schools (12 percent against 7 percent; figure 1; see also table C1 in appendix C).

When Anchorage was excluded from the analysis, some of the differences in student characteristics between PEG and non-PEG districts in 2018/19 changed. The difference in the percentage of economically disadvantaged students between PEG and non-PEG districts disappeared (see panel B in table C1 in appendix C). The difference in the percentage of students in rural remote schools between PEG and non-PEG districts increased from 5 percentage points to 14 percentage points, and the difference in the percentage of Alaska Native students increased from 1 percentage point to 11 percentage points. The difference in the percentage of English learner students between PEG and non-PEG districts remained but decreased slightly, from 10 percentage points to 4 percentage points. Other results were similar when Anchorage was excluded from the analysis.

From 2016/17 to 2018/19, as more districts received Pre-Elementary Grant funding, the proportion of students in Pre-Elementary Grant districts who were Alaska Native or who attended rural remote schools increased, although the characteristics of students in Alaska remained fairly stable. Student demographic characteristics remained fairly stable in Alaska from 2016/17 to 2018/19. However, the demographic composition of students enrolled in

Figure 1. Pre-Elementary Grant (PEG) districts served a more historically disadvantaged kindergarten population than non-PEG districts in 2018/19



Note: See table C1 in appendix C for results for additional district student characteristics and for results of analyses excluding Anchorage. This figure is based on student demographic characteristics in kindergarten.

Source: Authors' analysis of Alaska Department of Education & Early Development data.

PEG districts shifted along with changes in the districts receiving PEGs (see table C1 in appendix C). The percentage of kindergarten students in PEG districts who were Alaska Native increased by 3 percentage points, and the percentage of kindergarten students who attended rural remote schools increased by 4 percentage points. When Anchorage was excluded from the analysis, the results were similar (see panel B in table C1). The number of school districts statewide receiving PEGs increased from 13 in 2016/17 to 18 in 2017/18 to 24 in 2018/19. During this time the number of kindergarten students in these districts grew from 7,826 to 8,410 (see table B3 in appendix B). Anchorage is by far the largest school district in the state and received a PEG in each of the three years.

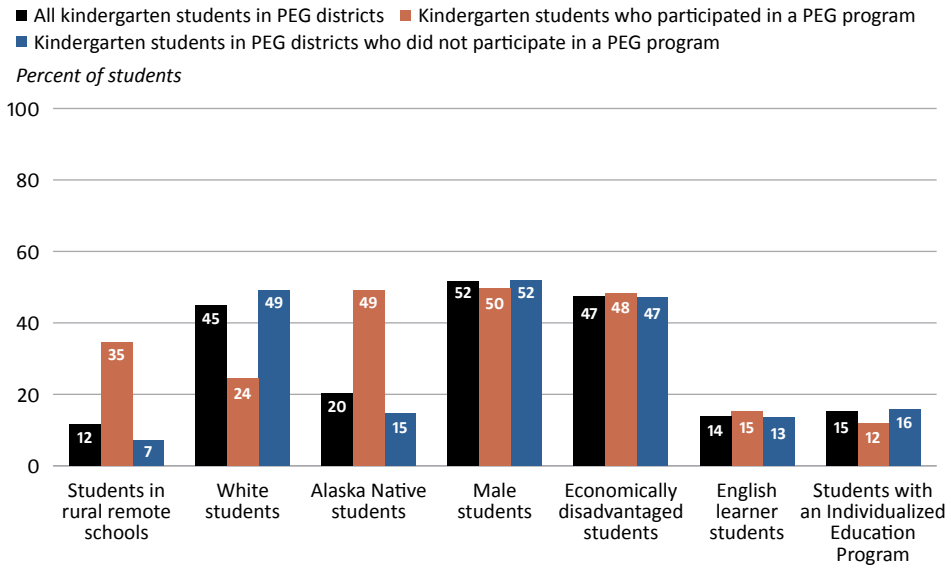
Kindergarten students in 2018/19 who had participated in Pre-Elementary Grant programs were more likely to be Alaska Native or enrolled in rural remote schools than were non–Pre-Elementary Grant students in the same districts

To determine the extent to which PEG programs served historically disadvantaged students, the study team compared the demographic characteristics of kindergarten students in PEG districts who had participated in a PEG program (enrolled in a preschool supported by PEG) with those of kindergarten students who had not. This enabled an exploration of the extent to which the PEG program was meeting its goal of serving the students most in need of support. For context, the characteristics of kindergarten students as a whole in Alaska were also examined.

Among students in the same districts, Pre-Elementary Grant students were more likely to be Alaska Native or enrolled in rural remote schools and less likely to be White or to have an IEP than non–Pre-Elementary Grant students. PEG programs served relatively high proportions of Alaska Native students and students in rural remote schools. In 2018/19 PEG students were 49 percent Alaska Native and 24 percent White (the two largest student groups; figure 2).[3] By contrast, non-PEG students in the same districts were 15 percent Alaska Native and 49 percent White. The large number of students in Anchorage affects some of the student demographic

3. The percentages for other races/ethnicities among PEG students in kindergarten in 2018/19 were 1 percent Black, 5 percent Latinx, 5 percent Asian, 1 percent American Indian, 10 percent Multiracial, and 4 percent Native Hawaiian or other Pacific Islander.

Figure 2. In Pre-Elementary Grant (PEG) districts the demographic characteristics of kindergarten students who had participated in a PEG program differed from those of students who had not participated in a PEG program in 2018/19



Note: Data were not available for non-PEG students in the year before kindergarten. The data for PEG and non-PEG students are for kindergarten students who were preschool age the prior year. Thus, 2018/19 kindergarten students were eligible for preschool in 2017/18.

Source: Authors' analysis of Alaska Department of Education & Early Development data.

patterns. When Anchorage was excluded from the analysis, the percentage of PEG students who were Alaska Native was higher (64 percent), while the percentage of PEG students who were White remained nearly the same (23 percent; see table C2 in appendix C). In addition, 35 percent of all PEG students were enrolled in rural remote schools compared with 7 percent of non-PEG students. Not surprisingly, the percentage of PEG students who were enrolled in rural remote schools was lower when Anchorage was excluded (48 percent).

The proportions of economically disadvantaged students and English learner students were similar for PEG and non-PEG participants in PEG districts, while the proportion of students with IEPs was lower among PEG participants. About 48 percent of all PEG students were economically disadvantaged, similar to the 47 percent of non-PEG students (see table C2 in appendix C). When Anchorage was excluded from the analysis, the proportion of PEG students who were economically disadvantaged dropped to 38 percent; the proportion in Anchorage was 74 percent. The proportion of all PEG students who were English learner students was 15 percent, while the proportion of non-PEG students was 13 percent. English learner students made up 11 percent of PEG students when Anchorage was excluded from the analysis; the proportion in Anchorage alone was 27 percent. Students with an IEP made up 12 percent of all PEG students and 16 percent of non-PEG students. When Anchorage was excluded from the analysis, 7 percent of PEG students and 17 percent of non-PEG students had an IEP. However, in Anchorage the pattern flipped: 24 percent of PEG students had an IEP compared with 14 percent of non-PEG students.

There were only two changes in the demographic characteristics of students between the 2017/18 and 2018/19 kindergarten cohorts who had been PEG students in the prior year (see table C2 in appendix C). The percentage of PEG students who were White increased by 3 percentage points (from 21 percent to 24 percent) and the percentage who were economically disadvantaged decreased by 9 percentage points (from 57 percent to 48 percent). These results indicate that PEG districts as a whole did not increase the proportions of historically disadvantaged students served from 2017/18 to 2018/19.

In 2018/19 Pre-Elementary Grant programs in rural schools played a key role in providing preschool access in rural Alaska. PEG programs in rural hub/fringe and rural remote schools served higher proportions of the preschool-age students in those schools than did PEG programs in urban or urban fringe locales (see table C3 in appendix C). In PEG districts 48 percent of 2018/19 kindergarten students in rural remote schools had participated in a PEG program the previous year compared with only 9 percent of students in urban schools, indicating that PEG programs played an important role in providing access to preschool in rural Alaska.

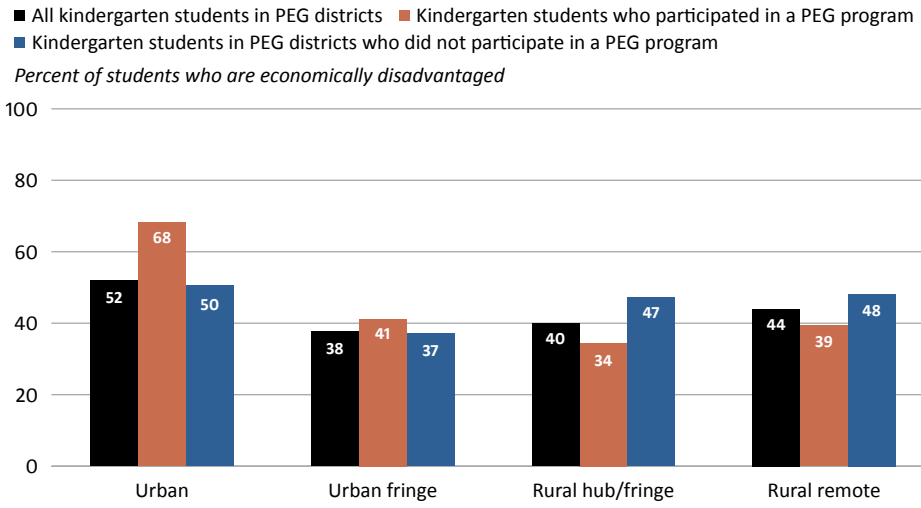
Pre-Elementary Grant programs in urban locales and in the Central Region served higher proportions of economically disadvantaged students than Pre-Elementary Grant programs in more rural locales and in other regions in 2018/19. The proportion of economically disadvantaged students participating in PEG programs varied by locale. In urban PEG schools the proportion of economically disadvantaged students was higher among students participating in PEG programs than among students not participating (figure 3; see also table C3 in appendix C). In contrast, in rural hub/fringe and rural remote PEG schools the proportion of economically disadvantaged students was higher among non-PEG students. Characteristics of PEG and non-PEG students also varied across regions of the state in 2018/19 (see table C4).

Most Pre-Elementary Grant districts used the program's flexible funding to improve access, increase capacity, and provide professional development to teachers and staff in 2018/19

The findings in this section are based on data from documents submitted to DEED and from interviews conducted with nine PEG program directors.

Eighteen PEG districts used grant funds to support or expand an existing preschool program or structure in their district. The remaining six districts each designed and developed a new program by finding facility space; hiring and training staff members; negotiating partnerships; and purchasing equipment, materials, and supplies. No information was available on whether PEG programs attempted to identify community needs regarding preschool.

Figure 3. The proportions of economically disadvantaged students participating in Pre-Elementary Grant (PEG) programs varied by locale in 2018/19



Note: The figure is based on 2018/19 kindergarten data (students were of preschool age in 2017/18) and includes only Pre-Elementary Grant (PEG) districts. It compares students in PEG districts who participated in PEG programs to students in PEG districts who did not participate in PEG programs.

Source: Authors' analysis of Alaska Department of Education & Early Development data.

Most of the PEG programs were offered in elementary schools and at multiple sites, increasing access to students in different parts of the district. Overall, 19 PEG programs were located exclusively in elementary schools, and the other 5 preschool programs were located in existing Head Start facilities, private facilities, or a combination of elementary schools and the other types of facilities. In total, 16 PEG preschool programs provided or supported preschool services at more than one site. The number of preschool sites supported by the multisite programs ranged from 2 to 12.

While many Pre-Elementary Grant programs shared the same goals, they used a variety of preschool strategies to achieve these goals in their communities. PEGs are designed to offer broad discretion and flexibility, which allows each PEG district to increase capacity and access and improve kindergarten readiness and preschool quality. Of the 24 PEG districts, 18 aimed to improve kindergarten readiness or improve preschool quality, while 16 sought to increase preschool enrollment and access for eligible children. Districts used and planned to use PEG funds in a variety of ways (table 1; see also table D1 in appendix D). According to budget documents, 20 PEG districts planned to use PEG funds to support both personnel and nonpersonnel expenditures, 16 PEG districts planned to use personnel funding for permanent staff members (such as teachers), and 7 PEG districts used or planned to use some personnel funding to support contractual staff members or extended-duty contracts.

Professional development was a focus of most Pre-Elementary Grant programs. PEG districts prioritized professional development for preschool teachers and staff members, with 19 of the 24 PEG districts using grant funds to support professional development activities for staff members (see table D1 in appendix D). Coaching and conference attendance were the most common methods of professional development: seven districts provided each type of professional development to staff. Among the 16 PEG districts that discussed the content of professional development, the most common areas of focus were assessment (10 districts) and curriculum (6 districts).

Partnerships and more informal organizational relationships provided support for many programs. Eight districts submitted documents that indicated that partnerships were an essential part of operating their programs (see table 1 and table D1 in appendix D). The study team defined partnerships as collaborations with organizations outside the district that provide staffing, child care, instruction, or free facility space for the PEG program (see appendix D). The eight PEG districts describing partnerships collaborated with Head Start, local tribes, and private child care/preschool organizations.[4] For example, one district provided certificated (certified) staff members, training, materials, and other support to preschool classrooms operated by a nonprofit partner and a Head Start partner. Another PEG district partnered with a local private child care center that provided extended-day child

Table 1. Pre-Elementary Grant districts planned to use grant funds for a variety of purposes, 2016/17–2018/19

Use or planned use of funds	Number of districts
Both personnel and nonpersonnel	20
Staff professional development	19
Permanent teaching staff	16
Partnerships	8
Extended duty personnel contracts	7
Home outreach and support	5
Summer bridge programs	3

Note: This table includes data from all 24 Pre-Elementary Grant (PEG) districts. Each PEG district used or intended to use PEG funds for multiple purposes.

Source: Authors' analysis of grantee materials submitted to the Alaska Department of Education & Early Development and interviews.

4. Districts could describe partnerships in either strategic planning forms or grant applications. Additional districts might have participated in partnerships that were not described in grant applications or strategic plans.

care for children who attended the PEG program. One district partnered with a tribe and a Head Start program, and each of the three partners funded different staff positions.

In addition to partnerships nearly all PEG districts leveraged relationships with organizations outside the school district. Two PEG districts reported that local health organizations provided medical screenings and vaccinations for children. Twenty-three PEG districts reported that they relied on input from external advisors or organizations to help guide their PEG program. The advisors included other preschool directors, Head Start directors, tribal representatives, local business leaders, parents/caregivers, and other community members, who advised PEG districts about preschool program expansion or quality improvements during meetings or in leadership committees. In some cases the organizations and individuals acted as the primary liaison between the PEG district and the community.

A few Pre-Elementary Grant programs offered intensive home outreach to support parents' efforts to provide preschool instruction, but a greater number of programs used more common family engagement activities. One of the less common supports described in the documents submitted to DEED was home outreach and support (training, curriculum, and support to enable families to provide or supplement preschool education in their home), which five rural PEG districts offered. In four of the five districts more than half the students were economically disadvantaged. Seven districts reported low or irregular student attendance as a challenge, including three of the five districts that documented home outreach practices. Program directors might use home outreach to encourage preschool attendance or to improve kindergarten readiness, particularly in response to perceived family needs. In an interview one PEG program director said, "We actually teach [parents] how to play with their kids."

PEG districts offered a variety of activities to engage families. For example, 12 PEG districts hosted family engagement nights or meetings to provide general information, help families better understand how to support children's academic skills, or give families opportunities to meet one another. In addition, nine PEG districts reported holding parent–teacher conferences to discuss children's knowledge and skills.

Preschool schedules, daily activities, and goals were relatively similar across Pre-Elementary Grant programs. A majority of Alaska PEG districts offered part-day preschool to 3- to 5-year-olds for four or five days a week, and most programs operated for at least the duration of the school year. Of the 20 PEG districts that reported a daily schedule in documents submitted to DEED, 17 supported exclusively part-day preschools (those that operated for fewer than six hours a day). Another two districts supported preschools that offered full-day preschool at one or more (but not all) of their locations. One PEG district offered exclusively full-day preschool at its single location.

PEG program directors who were interviewed for this study described similar daily activities and use of established curricula to help ensure high-quality preschool. The daily activities included check-ins, small-group activities or centers, large-group activities or circle time, gross motor skill activities, and free playtime. Only one program director explicitly mentioned direct instruction, although direct instruction might be included in some of the small- and large-group activities. Overall, 18 districts used a curriculum for at least one subject area, and six districts did not report any curriculum in documents submitted to DEED.

PEG districts differed in their use of technology in the classroom. Among the nine PEG program directors interviewed, one mentioned limiting the use of technology. Two directors noted that they provide tablets and technology time to help students develop technology skills.

Most PEG districts cited kindergarten readiness as an explicit goal. Overall, 18 PEG districts reported the goal of improving kindergarten preparation and increasing preschool quality to improve kindergarten preparation. In addition, 17 PEG districts offered kindergarten transition activities for children, families, and teachers to support this goal. The most common kindergarten transition activities, offered in 14 PEG districts, were kindergarten

classroom tours, opportunities to observe kindergarten classrooms, and other activities to help children feel more comfortable with kindergarten. Kindergarten information nights, offered by six PEG districts, helped parents/caregivers understand what to expect in kindergarten. Another six PEG districts provided opportunities for preschool and kindergarten teachers to collaborate and share data and information on children. Finally, staff members in six PEG districts worked to align curricula and standards between preschool and kindergarten to ensure a seamless transition of knowledge and skills for children.

Of the districts that reported on the progress of their PEG program, more than half indicated some early successes. For example, of the 12 districts with strategic plans, 11 reported the completion of professional development as one of their major successes. In addition, eight PEG districts reported in their strategic plans that they had met their own student enrollment goals. In interviews all nine of the program directors said that they believed that their students' knowledge and skills had improved and that their students were more prepared for elementary school because of their PEG program. Other interviewees attributed specific improvements in language, literacy, math, peer interactions, and the ability of children to play to their PEG program.

Implementation challenges included low enrollment, insufficient funding, and difficulty recruiting and retaining staff

PEG districts in rural locales reported facing some unique challenges in implementing their programs. Two rural districts reported limited opportunities to find partners or advisors in the area. Seven rural districts noted that inconsistent or low enrollment made it challenging to secure sufficient program funding and plan for their preschool program, because preschool funding is provided on a per-student basis and thus tied directly to enrollment. Additionally, two of these seven rural districts indicated that transportation of children to and from preschool was a barrier to preschool enrollment.

While PEG districts used multiple funding sources for preschool, program directors cited concerns about receiving sufficient operational funding across their funding sources. The document analysis revealed that a majority of PEG districts did not depend solely on PEG funds to operate their preschool program. Overall, 15 districts specified at least one funding source other than PEG. These included Title I, special education, federal grants such as the Alaska Native Education Equity Grants and Demonstration Grants for Indian Children, and community-based grants. All nine PEG program directors who were interviewed said that they blended PEG funds with other funds. Eight PEG program directors identified funding as one of their primary concerns, and seven said that they worried about whether funding (from PEGs and other sources) would be sufficient to continue operating their preschool program.

Recruiting and retaining teachers and staff were common challenges for several PEG districts. Six of the nine interviewed PEG program directors said that hiring and retaining highly qualified staff members who met each program's minimum qualifications were difficult (see appendix D for more information). Two directors said that they had trained an assistant teacher to fill a lead teacher role in their programs because they could not otherwise fill the position.

Participation in state-funded preschool programs was positively related to kindergarten readiness, kindergarten and grade 2 English language proficiency, kindergarten and grade 1 attendance, and grade 3 assessment scores in math among the 2014/15–2018/19 kindergarten cohorts; the positive relationships varied across student groups

The study team explored the connection between attending a PEG program (for 2017/18 and 2018/19 kindergarten cohorts) or other state-funded preschool (for 2014/15–2016/17 kindergarten cohorts) and student outcomes after adjusting for other student characteristics. Outcomes included kindergarten readiness (using the Alaska

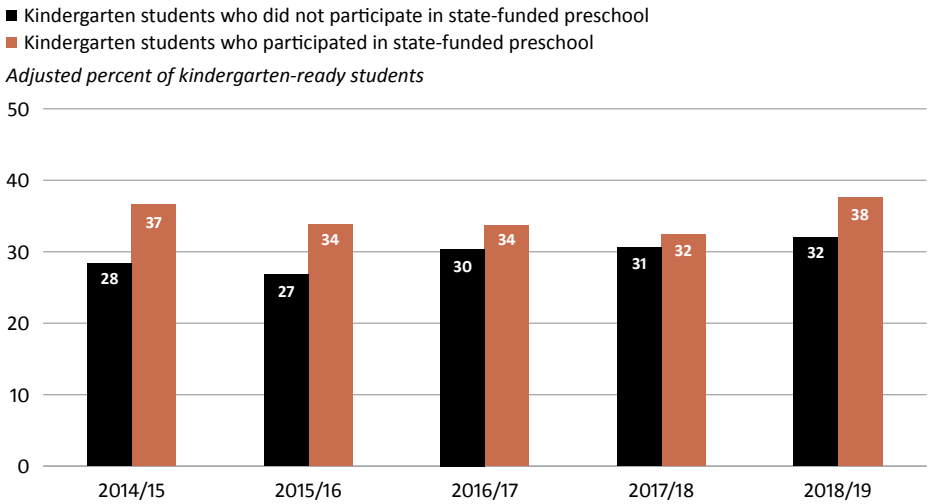
Developmental Profile, or ADP); kindergarten–grade 2 English language proficiency scores (Assessing Comprehension and Communication in English State-to-State, or ACCESS); kindergarten–grade 3 average annual attendance rates; and grade 3 math and reading standardized assessment scores (see table B6 in appendix B). The study team also explored the differences in outcomes between Alaska Native students, English learner students, economically disadvantaged students, and students with an IEP who attended state-funded preschool and their peers in each student group who did not attend a state-funded preschool.

The results are descriptive and do not provide causal evidence of the impact of participation in state-funded preschool on outcomes. The 2014/15, 2015/16, and 2016/17 kindergarten cohorts in the analyses attended earlier versions of an Alaska state-funded preschool program, while the 2017/18 and 2018/19 kindergarten cohorts attended a PEG program. All analyses were conducted by kindergarten cohort year and do not combine PEG and earlier state-funded programs (see appendix B for more information).

Participation in state-funded preschool had a positive relationship with kindergarten readiness for each cohort of kindergarten students (2014/15–2018/19). The percentage of kindergarten-ready students was higher among state-funded preschool participants in all cohorts, after other student characteristics were adjusted for. For example, in 2018/19, 38 percent of PEG students were kindergarten ready compared with 32 percent of non-PEG students (figure 4). In all five kindergarten cohorts (2014/15–2018/19), there was a statistically significant positive relationship between attending a state-funded preschool and two measures of kindergarten readiness: the likelihood of scoring a 2 (consistently demonstrates kindergarten readiness skills) in 11 of 13 domains on the ADP and the number of ADP domains in which a student scored a 2 (see appendix B for more information about the ADP and table C5 in appendix C for complete results of the analysis). The results were positive for most cohorts for both measures of kindergarten readiness for analyses that examined Anchorage alone and for analyses that excluded Anchorage (see table C5).

Participation in state-funded preschool was related to higher English language proficiency in kindergarten for 2016/17–2018/19 kindergarten students and in grade 2 for 2016/17 kindergarten students. For the 2016/17, 2017/18, and 2018/19 kindergarten cohorts, there was a positive and statistically significant relationship between

Figure 4. Students who participated in state-funded preschool had higher adjusted percentages of kindergarten readiness than students who did not participate, 2014/15–2018/19



PEG is Pre-Elementary Grant.

Note: These are adjusted percentages that account for differences in student and school characteristics between the two groups being compared.

Source: Authors' analysis of Alaska Department of Education & Early Development data.

participating in state-funded preschool and English language proficiency in kindergarten and grade 2, as measured by the ACCESS assessment, and no relationship for grade 1 (see table C7 in appendix C). For all three kindergarten cohorts for which ACCESS data were available (2016/17–2018/19), participation in state-funded preschool, including PEG, was related to higher English language proficiency in kindergarten. In grade 1, state-funded preschool attendance had no relationship with growth in English language proficiency for the 2016/17 and 2017/18 cohorts (the two cohorts for which grade 1 data were available). In grade 2 there was a positive relationship between state-funded preschool attendance and English language proficiency growth for the 2016/17 kindergarten cohort (the only cohort for which grade 2 data were available). When Anchorage was excluded from the analysis, the results were not statistically significant, perhaps because of the smaller number of English learner students included in those analyses. The results for the analysis of Anchorage alone were stronger than the overall results and followed the same pattern of significance across grades and cohorts.

Participation in state-funded preschool was related to slightly higher average annual kindergarten attendance rates for 2016/17–2018/19 kindergarten students, but there was no clear relationship with attendance rates in grade 1, 2, or 3. Overall, results for attendance in kindergarten–grade 3 were mixed. For the 2016/17, 2017/18, and 2018/19 kindergarten cohorts, there was a positive relationship between participating in state-funded preschool and average annual kindergarten attendance rates (see table C9 in appendix C). After student race/ethnicity, English learner status, gender, IEP status, economically disadvantaged status, age at kindergarten entry, and Head Start attendance were controlled for, participating in a state-funded preschool was related to a 1–2 percentage point increase in attendance rate in kindergarten compared with students who did not attend a state-funded preschool. However, there was no relationship between state-funded preschool and kindergarten attendance for the 2014/15 or 2015/16 kindergarten cohorts.

For grade 1 attendance there was no relationship for the 2014/15, 2016/17, and 2017/18 kindergarten cohorts, but there was a positive relationship for the 2015/16 cohort. For grade 2 attendance there was a positive relationship only for the 2014/15 cohort but not for later cohorts, and there was no relationship for grade 3 attendance. The mixed results for grades 1, 2, and 3 suggest a fade out of the relationship between participation in state-funded preschool and student attendance beyond kindergarten. Results continued to be mixed when analyses excluded Anchorage and when analyses examined Anchorage alone; Anchorage does not seem to drive overall attendance results (see table C9 in appendix C).

Participation in state-funded preschool among the 2014/15 and 2015/16 kindergarten cohorts, before Pre-Elementary Grants were implemented, was not related to grade 3 standardized assessment scores in reading, but participation for the 2015/16 kindergarten cohort was positively related to grade 3 assessment scores in math. For the 2014/15 and 2015/16 kindergarten cohorts, there was no relationship between participation in state-funded preschool and grade 3 standardized assessment scores in reading, but for the 2015/16 cohort there was a relationship with grade 3 math scores (see table C11 in appendix C). When Anchorage was excluded from the analysis, there was no relationship between participation in state-funded preschool and grade 3 standardized assessment scores in math or reading for either the 2014/15 or the 2015/16 kindergarten cohort. The analysis for Anchorage found a positive relationship between state-funded participation and grade 3 standardized assessment scores in both math and reading for the 2015/16 cohort.

Participation in state-funded preschool had a positive relationship with grade 3 math scores for Alaska Native students and for economically disadvantaged students but not for English learner students or students with an IEP. There was no relationship between participation and reading scores for these four student groups (see table C12 in appendix C). As additional state-funded preschool cohorts take grade 3 assessments, it will be possible to determine whether these results hold across cohorts.

Pre-Elementary Grant participation in 2017/18 had a positive relationship with kindergarten readiness, kindergarten English language proficiency, and average annual kindergarten attendance for specific student groups. The relationship between PEG participation and kindergarten readiness, kindergarten English language proficiency, and average annual kindergarten attendance varied across student groups for the 2018/19 kindergarten cohort. For Alaska Native and economically disadvantaged students, PEG participation was related to higher rates of kindergarten readiness, English language proficiency, and attendance. For English learner students, PEG participation was related to higher rates of kindergarten readiness and attendance. For students with an IEP, PEG participation was related to higher rates of kindergarten attendance but not higher rates of kindergarten readiness or English language proficiency (see tables C6, C8, and C10 in appendix C).

Implications

The study findings have important implications for Alaska's efforts to expand preschool and may also be of interest to other predominantly rural states that are considering similar efforts.

The state and Pre-Elementary Grant districts can refine strategies for serving historically disadvantaged populations

Since 2016/17 PEG districts overall have served a more diverse group of students than non-PEG districts, particularly as more districts received grants. This study found that Alaska Native, English learner, and economically disadvantaged students who participated in PEG also had higher rates of kindergarten readiness than their counterparts who did not participate in PEG. However, these are associations and do not provide evidence of a causal link between PEG participation and kindergarten readiness. Future statewide strategies could incentivize PEG enrollment of historically disadvantaged students, particularly in rural districts where the proportions of PEG students who are historically disadvantaged are lower. For example, the state could use incentives to encourage districts to enroll economically disadvantaged students in PEG programs, as analyses that excluded Anchorage found that a smaller proportion of these students participated in PEG programs. At the district level, PEG program directors could implement strategies to increase enrollment of historically disadvantaged students by, for example, partnering with local organizations serving those students.

Practitioners and state agency staff members in Alaska can improve programming and provide more targeted support to Pre-Elementary Grant districts by identifying and offering guidance on how to implement specific program components, such as strategic partnerships and home outreach

By providing information on how PEG programs have used or planned to use their PEG funds, this study provides examples that can inform the work of practitioners in other small preschool programs and rural locales. The implementation findings can help PEG program directors and other practitioners identify components that might improve preschool access, capacity, and quality. For example, PEG districts with supportive program partners found that the partnerships were essential for providing high-quality preschool and, in some cases, for increasing preschool capacity and access through creative solutions such as wraparound care provided outside of preschool hours. Other strategies used by PEG programs to improve access to preschool and kindergarten readiness included home outreach to parents and summer bridge programs.

The implementation findings can also help DEED target professional development and other support for districts and help modify the grant program in the future. For example, DEED could provide examples of how PEG districts use their funds, which could help districts new to the program.

Flexibility in the use of Pre-Elementary Grant funds has helped expand preschool infrastructure, but the state might want to consider ways to support and measure program quality

PEG funding was designed to provide flexibility for school districts in prioritizing their quality, access, or capacity needs. Although improving quality is a common goal among PEG programs, and the literature indicates a positive relationship between program quality and student outcomes (Van Huizen & Plantenga, 2018), the state does not systematically measure PEG program quality. Phasing in quality standards could encourage school districts to put minimum standards in place to improve quality. Requiring an annual program quality assessment, such as the Early Childhood Environment Rating Scale, might also provide information that DEED could use to target technical assistance for program improvement.

Overall, PEGs are helping districts build and expand preschool programs, but additional guidance and funding from the state might further improve the quality of program implementation. For example, to ensure that PEG programs are aligned with community needs, DEED could provide technical assistance in how to conduct a needs assessment and could consider asking grantees to document how their PEG program will meet or has met community needs. This could help districts assess the needs of their community and tailor PEG implementation to meet those needs. State support could also help districts set up partnerships. Although many grantees highlighted the value of local community support, several districts reported few opportunities for working with other organizations in the community. These districts might benefit from additional guidance, professional development, and support from DEED in identifying and helping establish relationships with local organizations and individuals.

Some PEG program directors observed that low funding levels—due to low enrollment—adversely affect their ability to operate a preschool. The state might want to consider providing a set amount of funds for districts with lower numbers of preschool-eligible students to help defray the fixed costs associated with operating a preschool program. Providing this type of funding for rural communities that have very little infrastructure could allow PEG to expand into rural remote communities that have few other options for early learning.

Promising results highlight the need for improved data collection and more rigorous research

This study explored correlational evidence and identified positive relationships between participation in state-funded preschool and kindergarten readiness, English language proficiency in kindergarten and grade 2, kindergarten attendance, and grade 3 assessment scores in math. These positive relationships are promising, but further research—particularly causal evidence—is needed to understand more about the impact of participation on student outcomes. Additional research could also document program structures and practices to better understand how implementation varies across districts. This study provides a framework for future research on the topic by describing and analyzing aspects of implementation and key outcomes that should be included in future work.

Alaska collects limited data on PEG program activities and does not systematically collect data on preschool quality from PEG programs. Determining and collecting measures of program quality would provide more information about the relationship between program quality and student outcomes. Requiring districts to submit records for preschool students—even in district-funded non-PEG preschools—would help the state understand the scope of district-provided preschool. Linking Head Start data and DEED data would also provide a clearer picture of which children in the K–12 system attended Head Start programs, allowing researchers to tease out the influence of state-funded preschool and that of Head Start on later outcomes and thus more accurately determine the impact of PEG programs.

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