

# Factors Associated with Grade 3 Reading Outcomes in the Commonwealth of the Northern Mariana Islands Public School System

## Why this study?

In 2019, 24 percent of grade 3 students in the Commonwealth of the Northern Mariana Islands (CNMI) Public School System scored at or above proficiency benchmarks on the ACT Aspire Reading assessment.<sup>1</sup> Students who meet grade 3 reading proficiency benchmarks may be more likely to meet later reading benchmarks and graduate from high school than those who do not meet those benchmarks.<sup>2, 3</sup> Stakeholders in the CNMI sought REL Pacific support to better understand factors associated with the reading proficiency of their grade 3 students and inform their efforts to improve student outcomes.

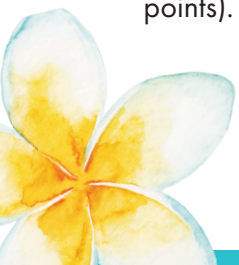
This REL Pacific study examined demographic characteristics and education experiences of students who took the ACT Aspire Reading assessment in grade 3. The study focused on grade 3 students who were enrolled in CNMI public schools from 2014/15 to 2018/19 and included 2,095 students.

Demographic characteristics examined:	Education experiences examined:
<ul style="list-style-type: none"><li>• Gender.</li><li>• Receipt of free or reduced-price lunch.<sup>4</sup></li><li>• Age at kindergarten entry.</li><li>• Ethnicity.</li></ul>	<ul style="list-style-type: none"><li>• Head Start enrollment.</li><li>• Mobility.<sup>5</sup></li></ul>

## What did the study find?

- Female students' probability of demonstrating reading proficiency was 4 percentage points higher compared to male students.
- Students who received free or reduced-price lunch had a lower probability of demonstrating reading proficiency than students who did not receive this benefit by 6 percentage points.
- The oldest students in the sample had a 10 percentage point higher probability of demonstrating reading proficiency compared to their youngest peers.\*
- Filipino students' probability of demonstrating reading proficiency was higher than that of Chamorro or Carolinian students (by 11 percentage points)\* or students reporting other ethnicities (by 9 percentage points).
- Head Start enrollment was not associated with grade 3 reading proficiency.
- Students who attended the same school from kindergarten to grade 3 had a 4 percentage point higher probability of demonstrating reading proficiency in grade 3 when compared to students who changed schools.

\*These characteristics reflect "major" differences as determined by the study team, since there was at least a 10 percentage point difference in the probability of demonstrating grade 3 reading proficiency between groups.



## Reflection Questions

### What other education environment factors could contribute to grade 3 reading performance?

This study was unable to examine a larger range of factors that prior research suggests can influence reading achievement. For example, studies have shown that teacher quality and years of experience can lead to better student performance.<sup>6,7,8</sup> In addition, most of this study's factors focused on student demographic characteristics, rather than potential behaviors or processes that schools might be able to influence, such as parent education programs or teacher training. Exploring additional factors and detailed qualitative data (collected via surveys, interviews, or focus groups) might provide greater insight on which factors may have the overall strongest associations with grade 3 reading proficiency.

### What could be the effects of early education programs on reading scores and other academic outcomes?

This study did not find a significant relationship between Head Start enrollment and grade 3 reading proficiency. While this does not necessarily reflect on the effectiveness of Head Start, it does suggest that additional research is needed to better understand the extent to which the program influences student learning, such as exploring attendance or participation in the program. Further research on the range of early childhood education programs in which CNMI children enroll might allow for a more robust understanding of the reasons behind the varying reading performances between student groups. It can also provide insights into how these programs influence academic outcomes across content areas and grade levels.<sup>9, 10</sup> Stakeholders could then use this information to determine ways to support students more effectively.



## Endnotes

1. Commonwealth of the Northern Mariana Islands Office of Accountability, Research, and Evaluation. (2019). *Annual report SY 2018–2019*. Commonwealth of the Northern Mariana Islands Public School System. [https://www.cnmipssoare.org/application/files/8815/8031/8258/SY\\_2018-2019\\_CNMI PSS\\_Annual\\_Report\\_1.24b\\_ForPrinters.pdf](https://www.cnmipssoare.org/application/files/8815/8031/8258/SY_2018-2019_CNMI PSS_Annual_Report_1.24b_ForPrinters.pdf)
2. Hein, V., Smerdon, B., & Sambolt, M. (2013). *Predictors of postsecondary success*. American Institutes for Research College and Career Readiness and Success Center. <https://eric.ed.gov/?id=ED555671>
3. Lesnick, J., Goerge, R., Smithgall, C., & Gwynne J. (2010). *Reading on grade level in third grade: How is it related to high school performance and college enrollment?* Chapin Hall at the University of Chicago.
4. In the 2018/19 school year, the CNMI Public School System began offering free lunches to all students.
5. Student mobility indicated whether a student stayed in the same school between grades K–3 or attended more than one school during that period.
6. Atlay, C., Tieben, N., Hillmert, S., & Fauth, B. (2019). Instructional quality and achievement inequality: How effective is teaching in closing the social achievement gap? *Learning and Instruction*, 63(1), 101–211. <https://doi.org/10.1016/j.learninstruc.2019.05.008>
7. Desimone, L. M., & Long, D. (2010). Teacher effects and the achievement gap: Do teacher and teaching quality influence the achievement gap between Black and White and high-and low-SES students in the early grades? *Teachers College Record*, 112(12), 3024–3073.
8. Hanushek, E. A., & Rivkin, S. G. (2006). *School quality and the Black-White achievement gap* (NBER No. w12651). National Bureau of Economic Research. <https://www.nber.org/papers/w12651>
9. Deming, D. (2009). Early childhood intervention and life-cycle skill development: Evidence from Head Start. *American Economic Journal: Applied Economics*, 1(3), 111–134. <https://doi.org/10.1257/app.1.3.111>
10. Phillips, D., Gormley, W., & Anderson, S. (2016). The effects of Tulsa's CAP Head Start program on middle-school academic outcomes and progress. *Developmental Psychology*, 52(8), 1247–1261. <https://doi.org/10.1037/dev0000151>



To access the published REL study, visit: <https://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=5666>

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