



# Predicting On-Time Promotion to and Literacy Achievement in Eighth Grade in Relation to Public Prekindergarten in Virginia

Virginia Early Childhood Research Consortium\*

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\*This research, coordinated by the Virginia Early Childhood Foundation, was conducted collaboratively by Erik Ruzek & Jason Downer (University of Virginia), Isabel Bradburn (Virginia Tech), and John Almarode (James Madison University) with coordination and support from Deborah Jonas (Virginia Early Childhood Foundation's Chewing Research Fellow), Jamie DeCoster (University of Virginia), and Elyssa N. Edwards (James Madison University). Sarika Gupta (formerly of George Mason University) contributed to the research. Funding was provided in part by the 4-Virginia Consortium administered by James Madison University, the Virginia Early Childhood Foundation, and the National Science Foundation (#1338491).

# Introduction

- This was the first study to examine long-term outcomes of public preK in Virginia.
- This study was a first-time project involving early childhood data accessed through the VLDS (Virginia Longitudinal Data System) in partnership with VDOE.
  - The study team was authorized to access **de-identified** data from children who were in Kindergarten in 2005/06.
  - The study followed ~77,000 students through 2013/14.
- The research team examined associations between public preK participation and on-time promotion and literacy outcomes.

# Research questions

- Are students who participated in VPI more likely to be promoted on time to third and eighth grades than are their peers?
- Do students who participated in VPI demonstrate greater literacy competence than similar peers in eighth grade?

# Methodology

The team compared public preK participants to other children from the same Kindergarten class (2005/06)

- Used a statistical procedure called “propensity score matching” (PSM) to create comparison group.
- PSM estimates who would have been eligible for VPI to create the most similar comparison group.
- The matching procedure enabled the study team to approximate an “apples to apples” comparison.
- Compared children who participated in public preK to children who had been eligible for VPI but were not identified as having participated in public preK.

# Methodological challenges

- Using available data, the team could not distinguish children enrolled in Virginia Preschool Initiative (VPI) from children in other public preK programs.
- The team established VPI/public preK status through test data.
  - Not all children in VPI/public preK were included in PALS preK data
  - Some children in VPI/public preK were in the comparison group
- The study compares children in *public preK*\* to children with *unknown preK* status.

\*Available information suggests that **most** of the children in this group were enrolled in VPI programs. Others were receiving services from Title I preK, special education preK, locally funded preK, and possibly Head Start.

# Key findings:

## Replication of earlier studies

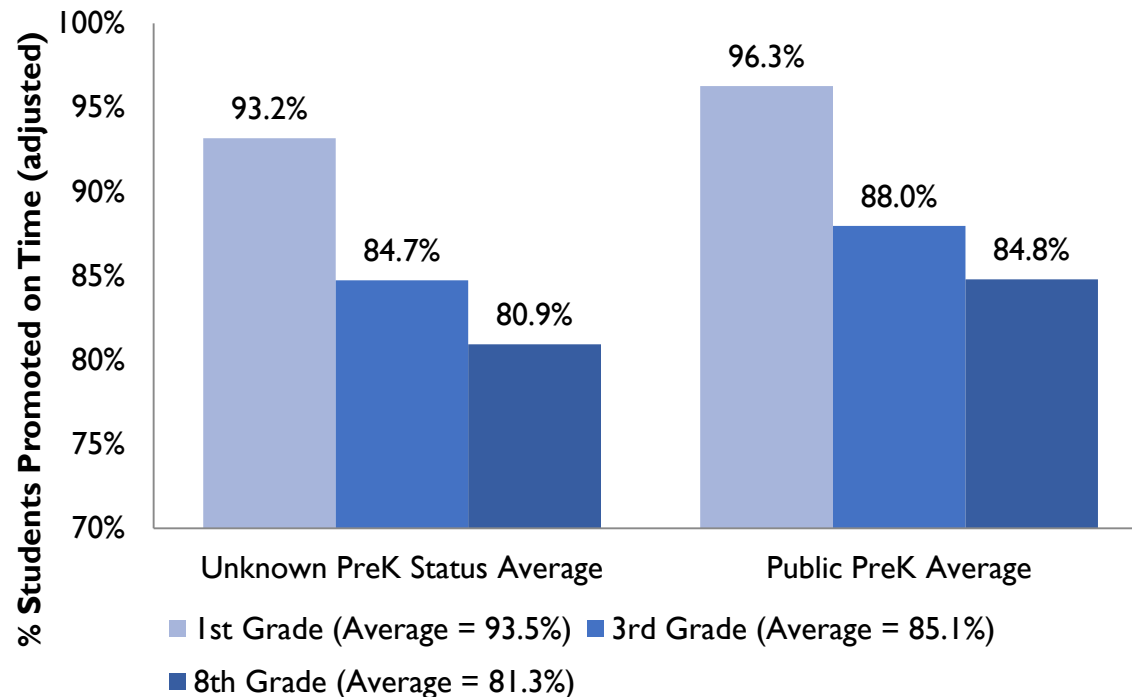
In Kindergarten and 1<sup>st</sup> grade, the known preK group outperformed peers in the unknown preK group.

- *Known PreK* students scored an estimated six points higher on PALS-K in fall kindergarten, compared to *Unknown Prek* students.
- *Known Prek* students were more likely to be promoted to Gr I on time.

# Key findings:

The *known preK* group was more likely to be promoted on-time to 1<sup>st</sup>, 3<sup>rd</sup>, and 8<sup>th</sup> grades

## Adjusted On-Time Promotion Rate by Grade Level



Adjusted on-time promotion rates were 3.1, 3.3, and 3.9 percent higher for the children known to have enrolled in public preK in 2004/05.

# On-time promotion

- Grade retention is associated with a host of deleterious effects, including substantial risk of later school dropout.
- Grade retention is also costly for schools, with an annual per-pupil expenditure in FY 13 of \$11,256.  
(as reported by VDOE)
- If replicated, this finding suggests that preK offers long-term benefits to students and significant cost-savings.



# Key findings

- There were no differences between the *known preK* and *unknown preK* groups on 8<sup>th</sup> grade reading and writing SOL tests.
- It is difficult to interpret this finding. The lack of differences could be a true pattern or a reflection of:
  - The comparison group including students who participated in preK.
  - Our comparison group being limited to students who took the 8<sup>th</sup> grade test.
- Additional research is needed before drawing conclusions.

## The study team also learned:

VLDS is a valuable tool; it would benefit from improved data collection.

- Study demonstrates the value of VLDS
  - VLDS provided a cost-effective tool for authorized researchers to access longitudinal data that did not include personal information.
  - The research team followed more than 77,000 children in a single cohort over 10 years of school.
- Future studies and VPI evaluations need to know who is VPI-enrolled to carry out more robust yet cost-effective studies using VLDS
  - Study team recommends that VDOE consistently collect student-level data to identify VPI-enrolled students to strengthen future research and program evaluation.\*

\*Since 2007, VDOE has had a data collection aimed at meeting this goal. Some anecdotal reviews suggest the data are not collected consistently and accurately across school divisions. <sup>10</sup>

# Study limitations

- The difficulty establishing a clear comparison group of children who were not enrolled in preK has implications for interpreting these findings.
- This was a study of a single cohort of students—it is critical to replicate.
- The study did not examine differences for specific student groups, such as those who are economically disadvantaged.
  - Prior research in Virginia (JLARC, 2007; Huang, et al., 2012) and nationally suggests that these students may experience greater benefits from preK participation.
- This study did not account for other factors known to influence student outcomes associated with preK participation:
  - Quality of prekindergarten
  - Quality of elementary and middle school experiences

# Recommended next steps

- In the short term, use this data set to:
  - Examine on-time promotion and literacy outcomes in key student groups (e.g., economically disadvantaged status)
  - Examine influence of additional factors (e.g., attendance; elementary school factors)
- In the long-term:
  - Replicate study with additional cohorts
  - Use trajectory models to understand approaches that schools can use to sustain gains made during preK participation

# Questions?

The [full report](#) is available at [vecf.org](http://vecf.org).

For more information about this research:

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