



DPP STUDENT OUTCOMES STUDY KINDERGARTEN READINESS AND LONGITUDINAL EVALUATIONS

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Kindergarten Readiness Questions

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1. Do children make progress in their development while in DPP early childhood environments (i.e., language, literacy, mathematics, exec function, and social-emotional development)?
2. To what extent and in what areas are children enrolled in DPP ready for kindergarten?
3. Do children from different subgroups and with different primary languages make similar progress while in DPP preschools?

Longitudinal Study Questions

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4. Do children who received DPP tuition credits compare favorably to the district as a whole on assessments administered by Denver Public Schools in kindergarten and beyond?
5. Is attendance at higher-rated preschool programs associated with greater kindergarten readiness and long-term academic success?

Study Design

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- ❑ Sample of 200 children—representative of the population of DPP children—selected each year
 - Change: Beginning with Cohort 9 (2016-17) 230 children will be selected
- ❑ Study uses a quasi-experimental design
 - ❑ Pre-K Study: pre-post, DPS-Community comparison
 - ❑ Longitudinal Study: DPP-DPS total average comparison

Student Outcomes Study Methods

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- Children are assessed in both fall and spring of preschool year using standardized assessments; parent and teacher-report surveys, and classroom observation.
- Secondary data is obtained from Denver Public Schools for longitudinal analysis.

Student Preschool Assessments

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Domains Assessed	Name of Standardized Assessment	Acronym	Language
Receptive Vocabulary	Peabody Picture Vocabulary Test-4	PPVT	English
	Test de Vocabulario en Imagenes Peabody	TVIP	Spanish
Literacy Skills	Woodcock-Johnson III Achievement Battery, Letter-Word Identification Subtest (Changed to IV)	WJ LWI	English
	Batería III Woodcock-Muñoz, Letter-Word Identification Subtest	WM LWI	Spanish
Math Skills	Woodcock-Johnson III Achievement Battery, Applied Problems Subtest (Changed to IV)	WJ AP	English
	Batería III Woodcock-Muñoz, Applied Problems Subtest	WM AP	Spanish

Preschool Surveys and Observation

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Domains Assessed	Name of Assessment	Acronym	Language
Executive Function - Sustained Attention	Leiter International Performance Scale-Revised, Attention Sustained Subscale (Changed to the Childhood Executive Functioning Inventory)	LAS (CHEXI)	Language free (English or Spanish)
Social-emotional Development: Initiative, Self-Control, and Behavior Concerns	Devereux Early Childhood Assessment	DECA	English or Spanish
Classroom Quality of Teacher-Child Interaction	Pre-K Classroom Assessment Scoring System	CLASS Pre-K	English

Who are we discussing today?

Student Ethnicity and Gender

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Ethnicity	Cohort 1	Cohort 8
African American	12.5%	12.0%
Latino	51.5%	47.0%
Multiracial / Other	15.5%	12.0%
White	20.5%	29.0%
Gender		
Male	48.0%	59.0%

Who are we discussing today?

Student Language and Home City Quadrant

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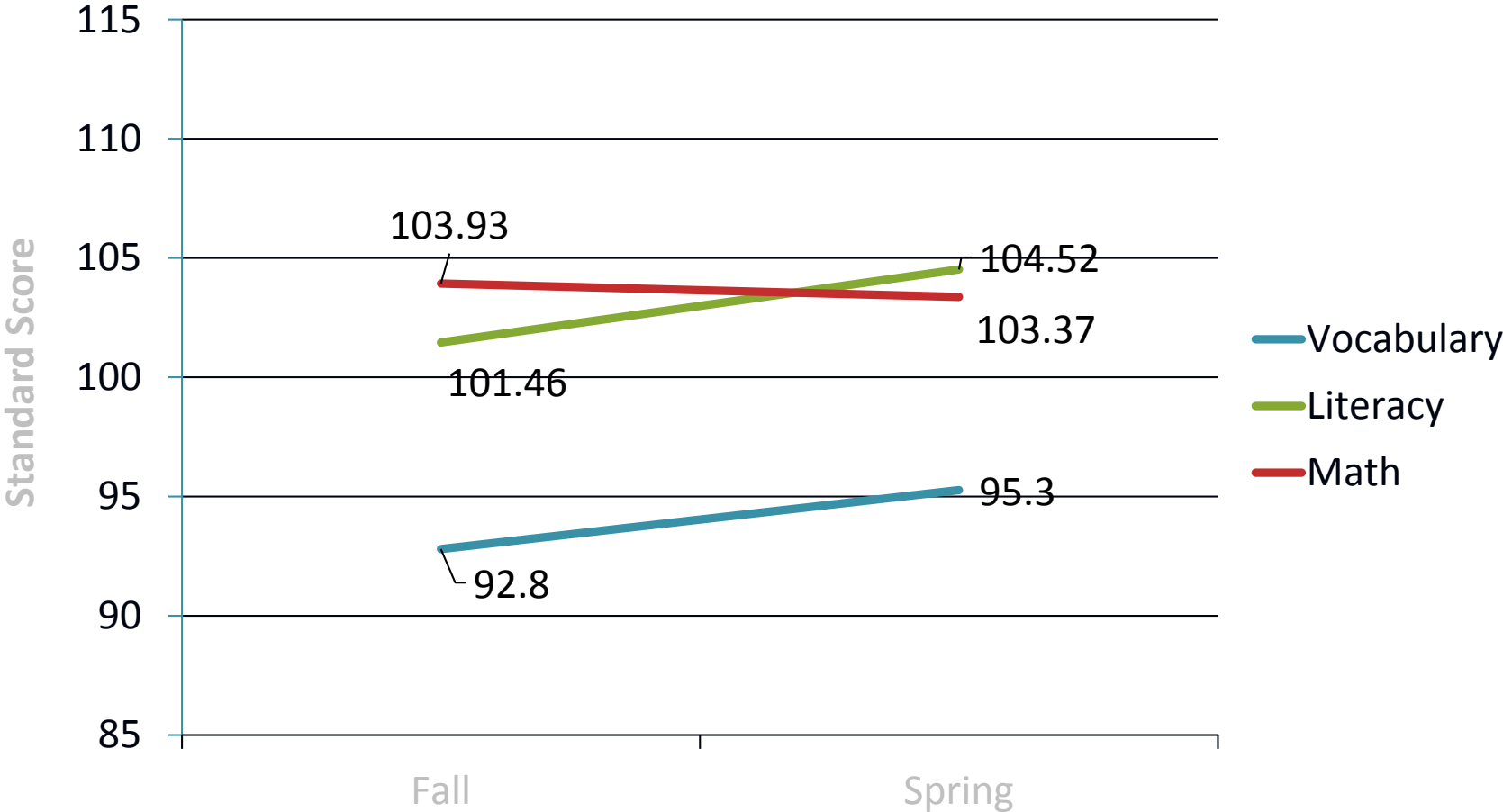
Child's Primary Language	Cohort 1	Cohort 8
English	68%	70%
Non-English	28%	30%
Unknown	4%	0%
City Quadrant		
Central	10%	12%
Northeast	34%	30%
Northwest	15%	18%
Southeast	15%	11%
Southwest	26%	27%
Unknown	0%	2%

Question 1

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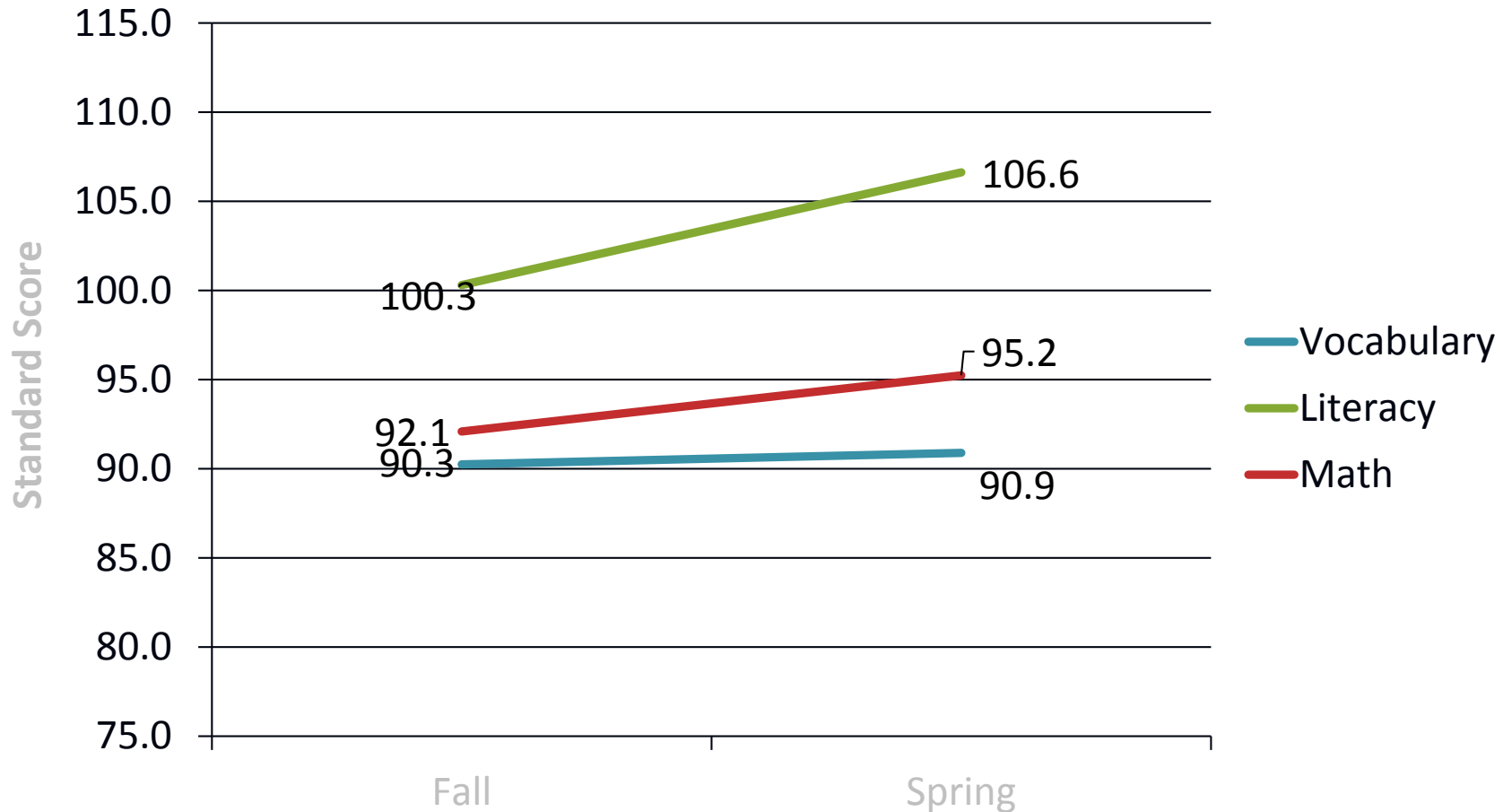
- **Did children make progress in their development during the preschool year?**
 - YES
 - Significant progress in literacy and vocabulary in *English*.
 - Significant progress in vocabulary in *Spanish*.
 - Fall sustained attention associated with stronger spring *English* literacy and math scores.
 - Teachers report significantly more positive protective factors and the same frequency of negative behaviors from fall to spring.

English Assessments – Fall to Spring



Spanish Assessments – Fall to Spring

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Question 2

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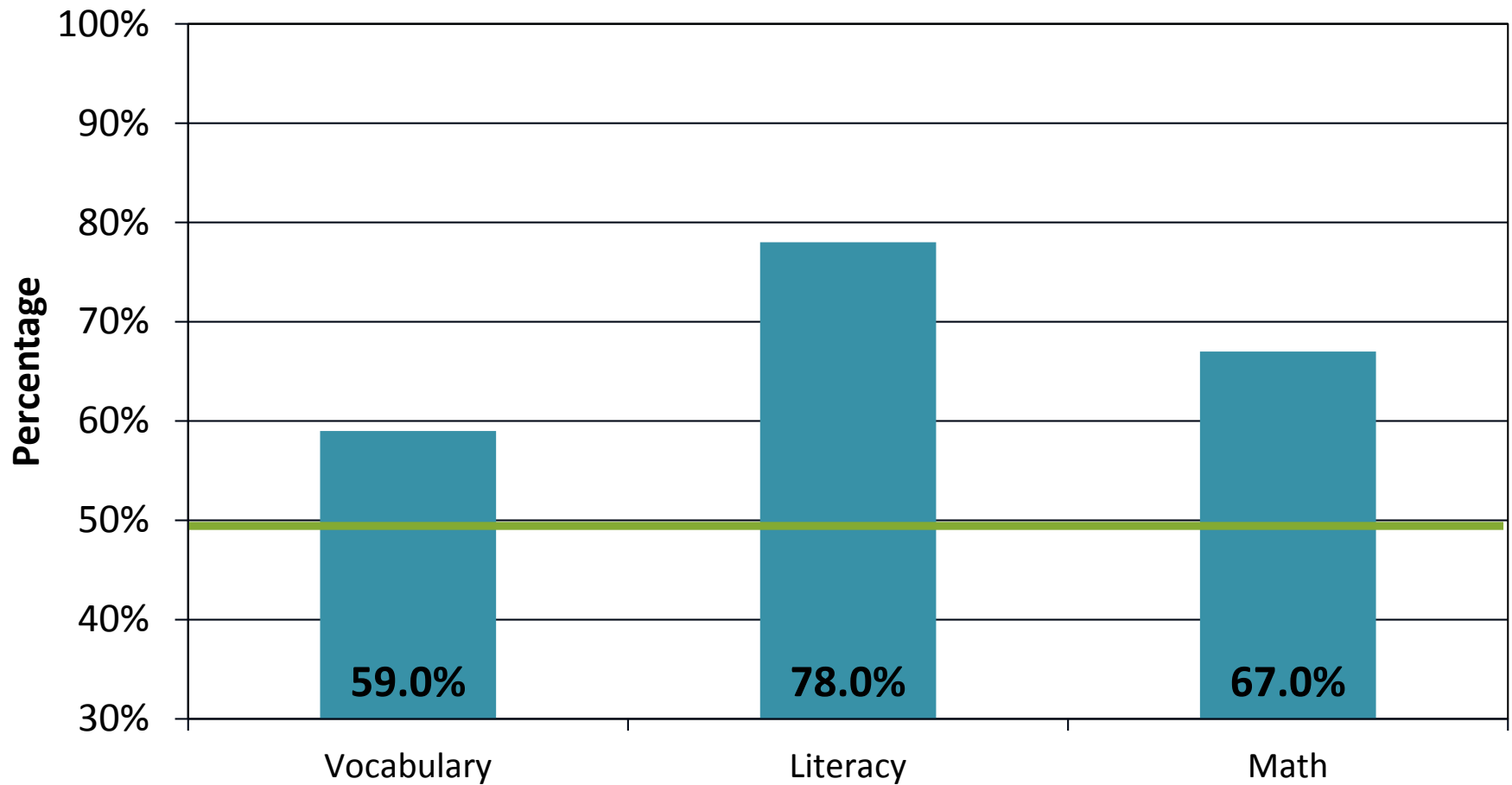
- **To what extent and in what areas are children enrolled in DPP ready for kindergarten?**
 - ▣ Majority of DPP children are ready for school both academically and social-emotionally.

Kindergarten Readiness among Preschoolers

Cohort 8 (2015-2016)

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Children Scoring at the National Average of 100 in Either Language – Spring 2016



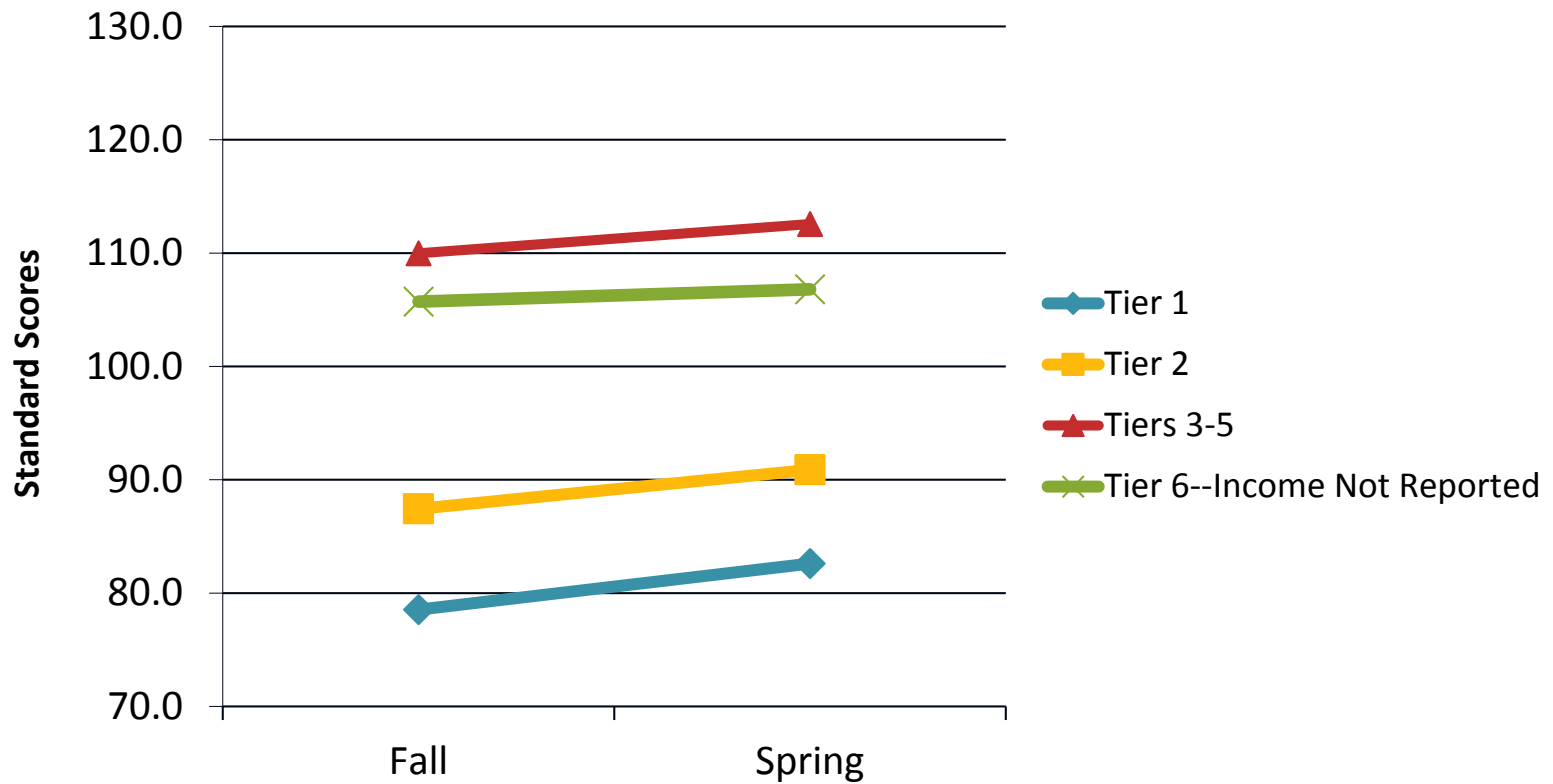
Question 3

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- **Do children from different income tiers and primary languages make similar progress during their DPP year?**
 - Very strong association between income and child's primary language in the sample. Any association observed is likely the result of a combination of these two factors.
 - Higher scores are observed for children in higher income tiers, but statistically significant gains are made for all reported income tiers.
 - Children with primary languages other than English tended to start and end lower than primarily English speakers, but do make statistically sig gains by spring.

English Receptive Vocabulary over Time by Tier

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Longitudinal Study Findings

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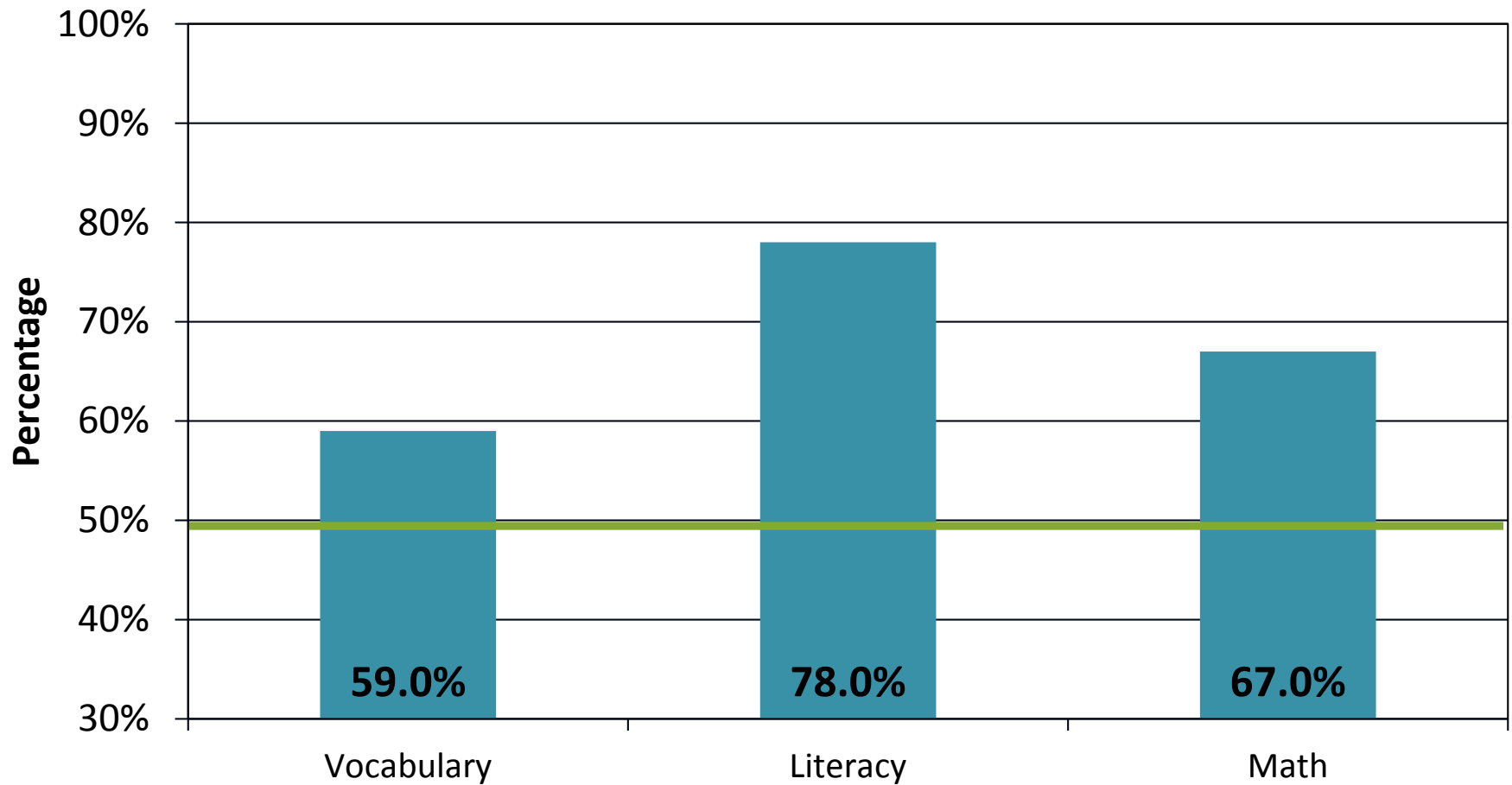


Kindergarten Readiness among Preschoolers

Cohort 8 (2015-2016)

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Children Scoring at the National Average of 100 in Either Language – Spring 2016

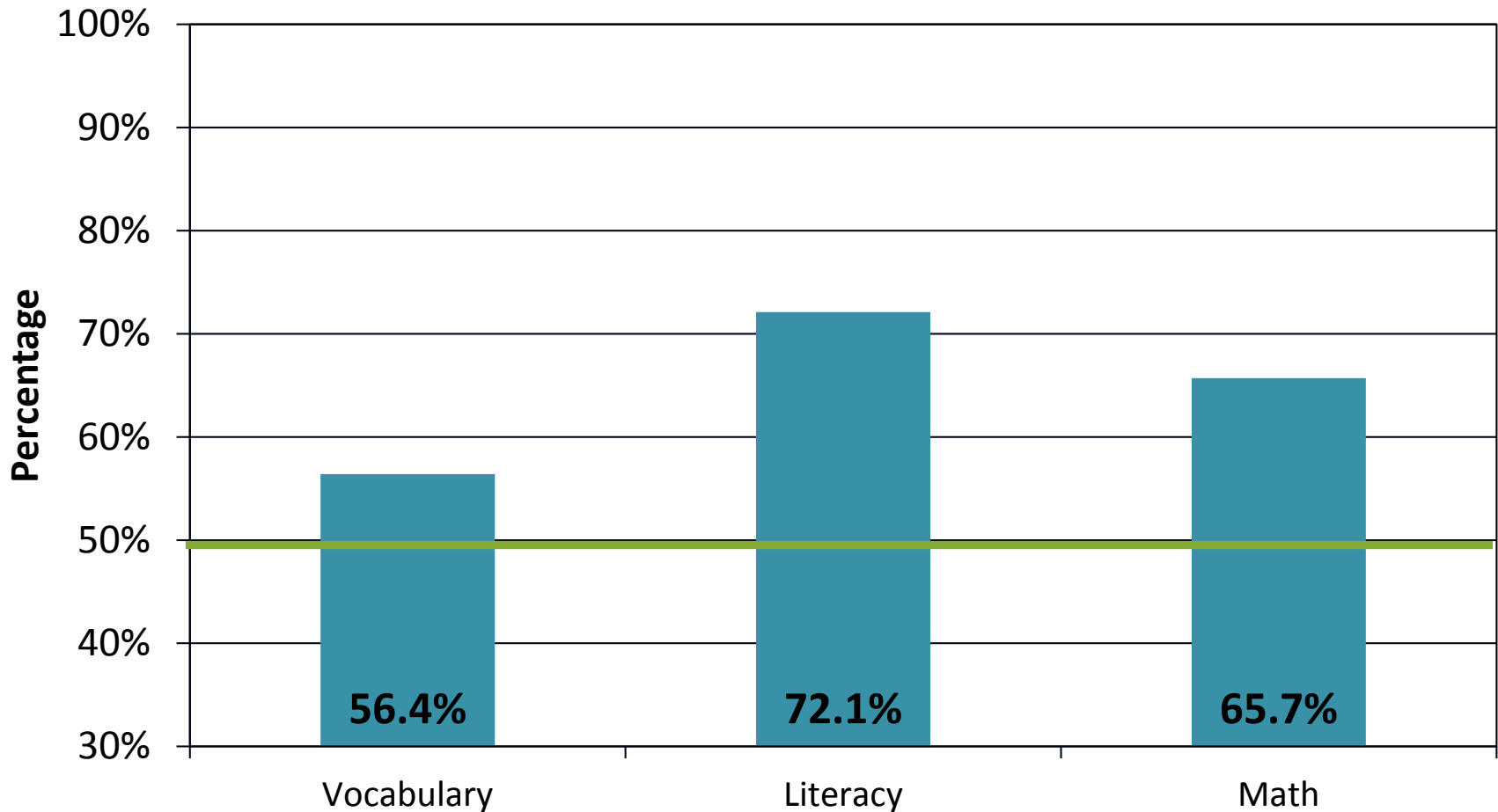


Kindergarten Readiness among Preschoolers

Cohort 7 (2014-2015)

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Children Scoring at the National Average of 100 in Either Language – Spring 2016



DPS Secondary Elementary Data

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Domains Assessed	Name of Assessment	Acronym	Language
CMAS Tests Reading and Math	Colorado Student Assessment Program Transitional Colorado Assessment Program Partnership for Assessment of Readiness for College and Careers	CSAP TCAP PARCC	English
Early Reading	Developmental Reading Assessment Evaluación del Desarrollo de la Lectura	DRA/EDL	English or Spanish
New Early Reading/Development	Array of tests selected by the schools, including DRA/EDL	iReady, iStation, DIBELS Next	English or Spanish

Question 5 – Cohort 7

Is attendance at higher-rated preschool programs associated with greater kindergarten readiness and long-term academic success?

- Pre-K English Literacy did significantly predict kindergarten group. Pre-K Math scores (assessed in English and in Spanish) did also. Spanish Literacy did not.
- Pre-K English or Spanish vocabulary did not significantly predict being on grade level or above in kindergarten for DPP sample as a whole, not even examined separately by income tier.

Question 5 – Cohort 1

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- Associations between the English preschool assessments and kindergarten English reading scores were strong and significant. Strongest with English literacy as for Cohort 7.
- For children who were assessed in Spanish in Pre-K, we found (a slightly weaker but significant) association between Pre-K literacy and math and reading skills at the end of kindergarten.

Question 4

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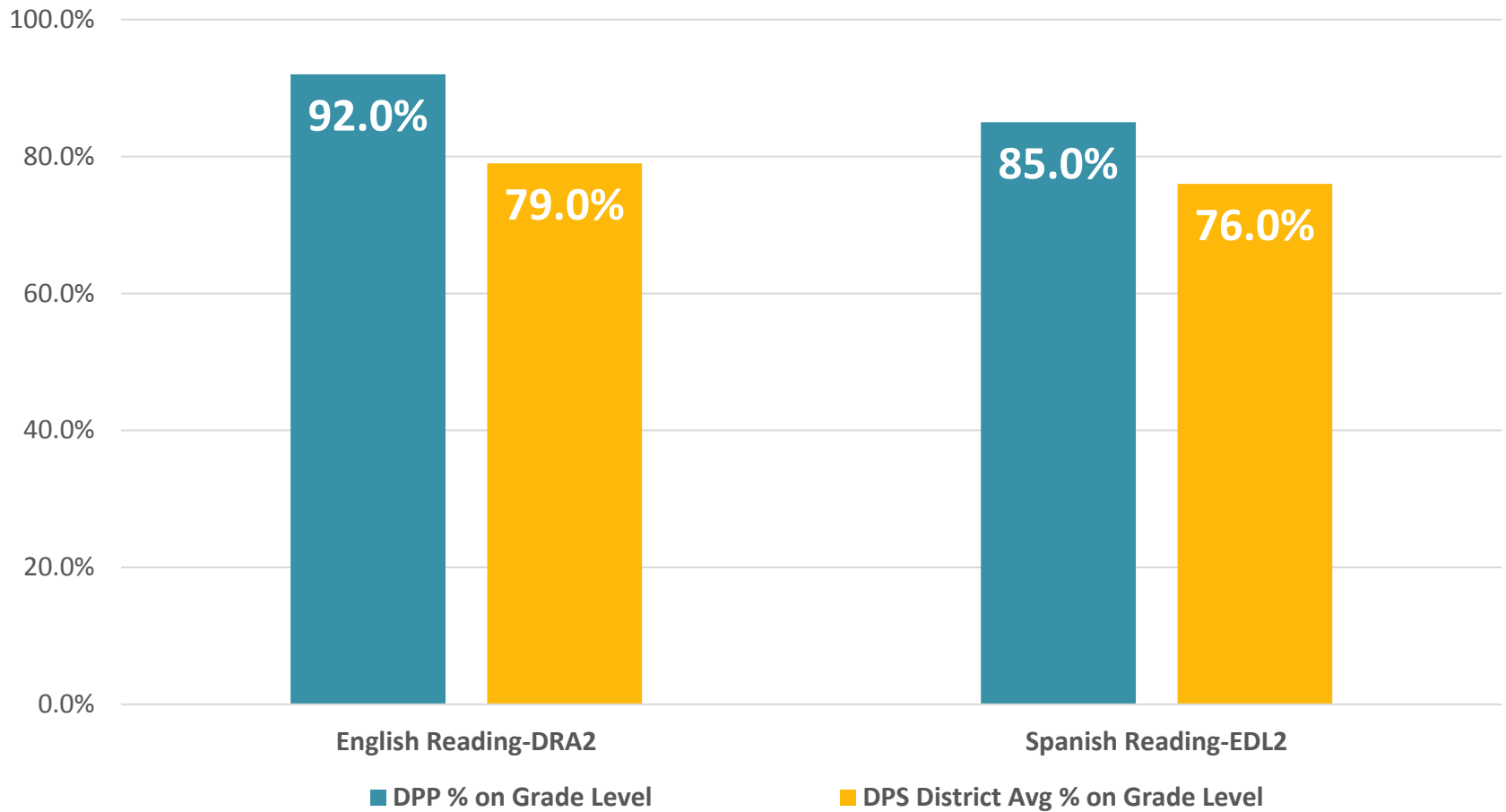
Do children who received DPP tuition credits compare favorably to the district as a whole on assessments administered by Denver Public Schools in kindergarten and beyond?

- Absolutely, in almost all cases.

Reading Achievement in Kindergarten

Cohort 1 in 2009-2010

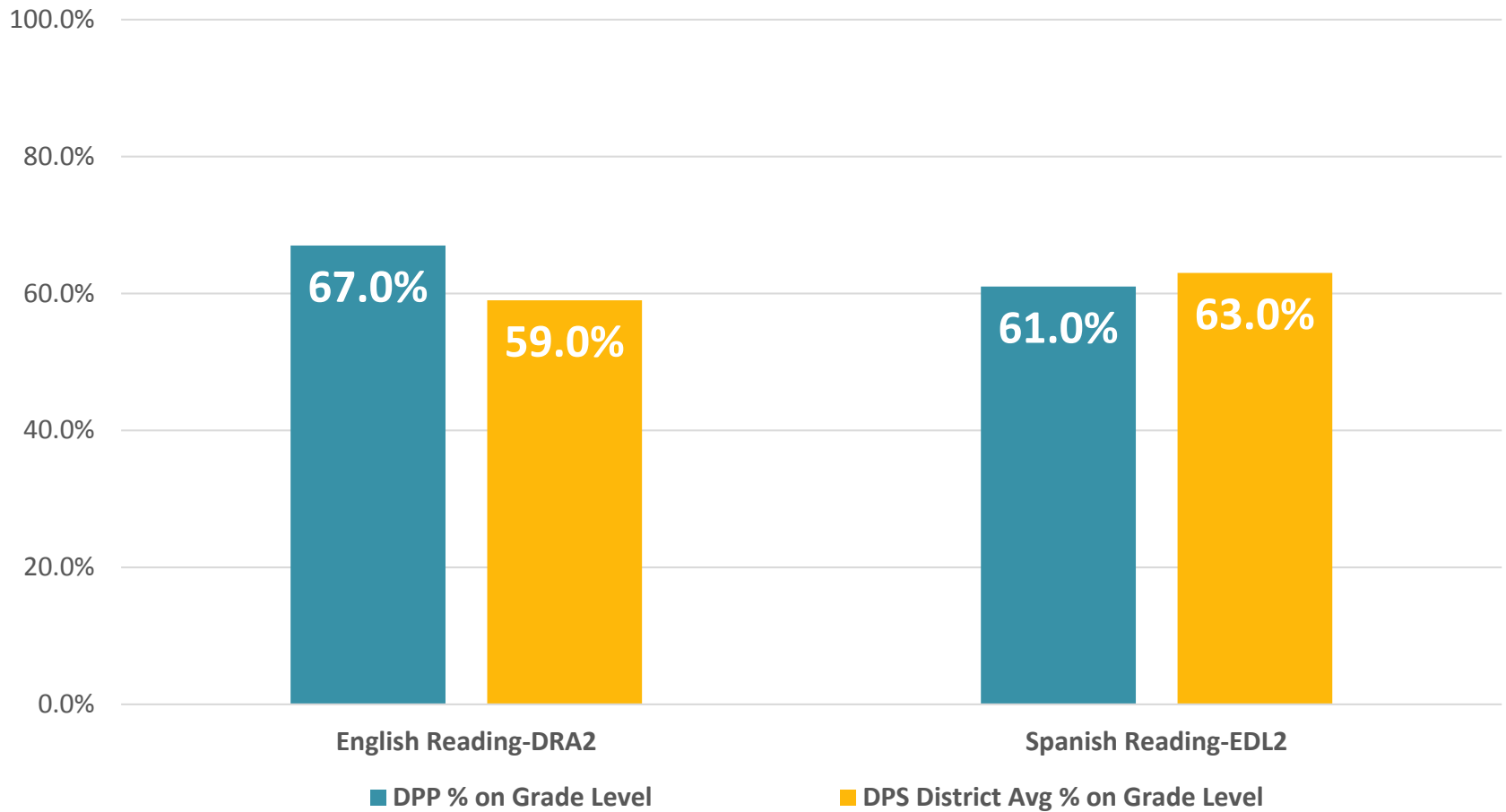
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Reading Achievement in First Grade

Cohort 1 in 2010-2011

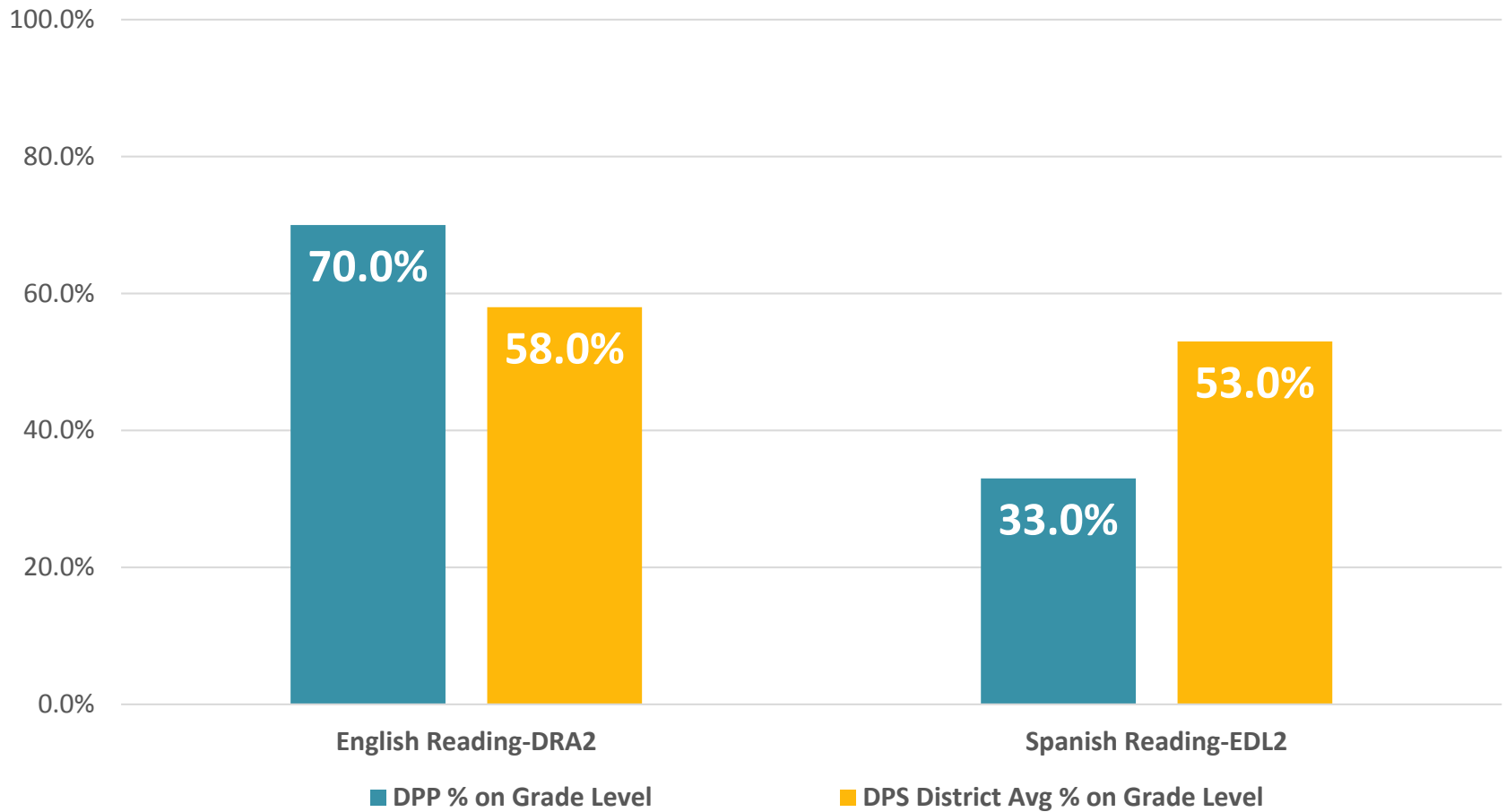
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Reading Achievement in Second Grade

Cohort 1 in 2011-2012

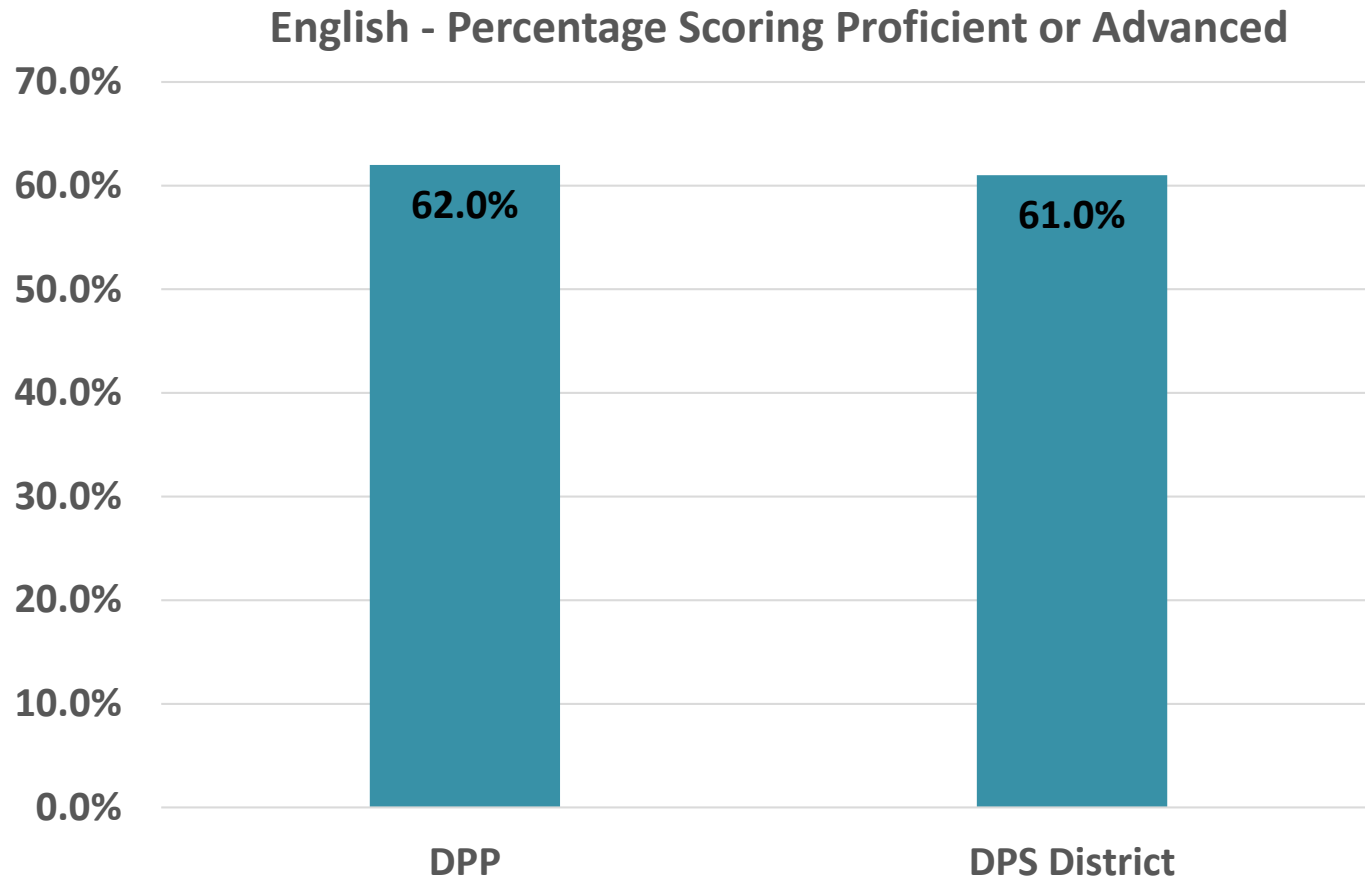
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Reading Achievement in Third Grade

Cohort 1 in 2012-2013

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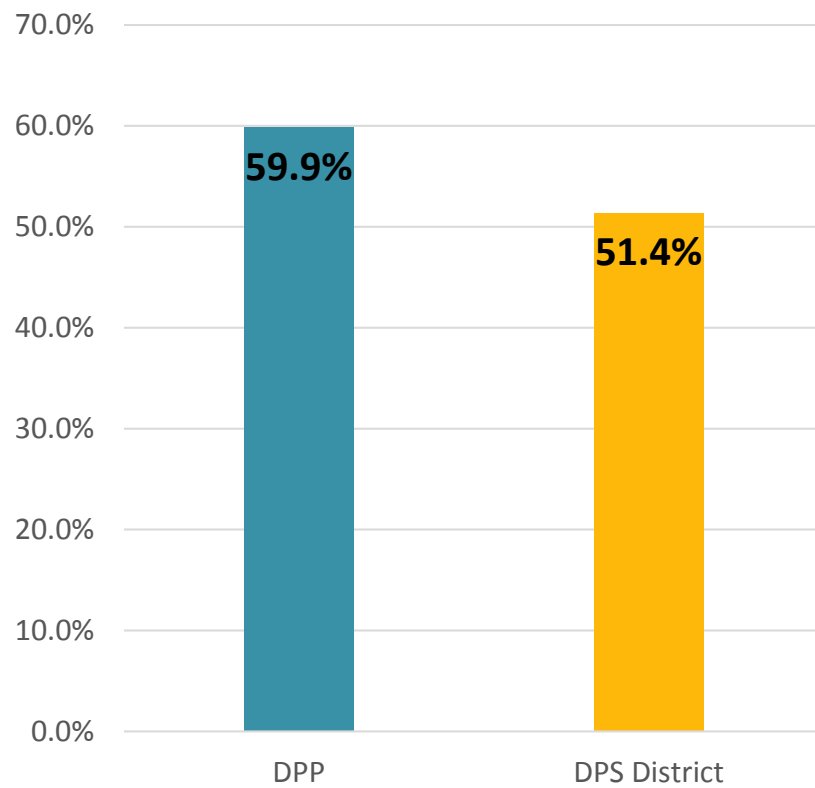


Reading & Math Achievement in Fourth Grade

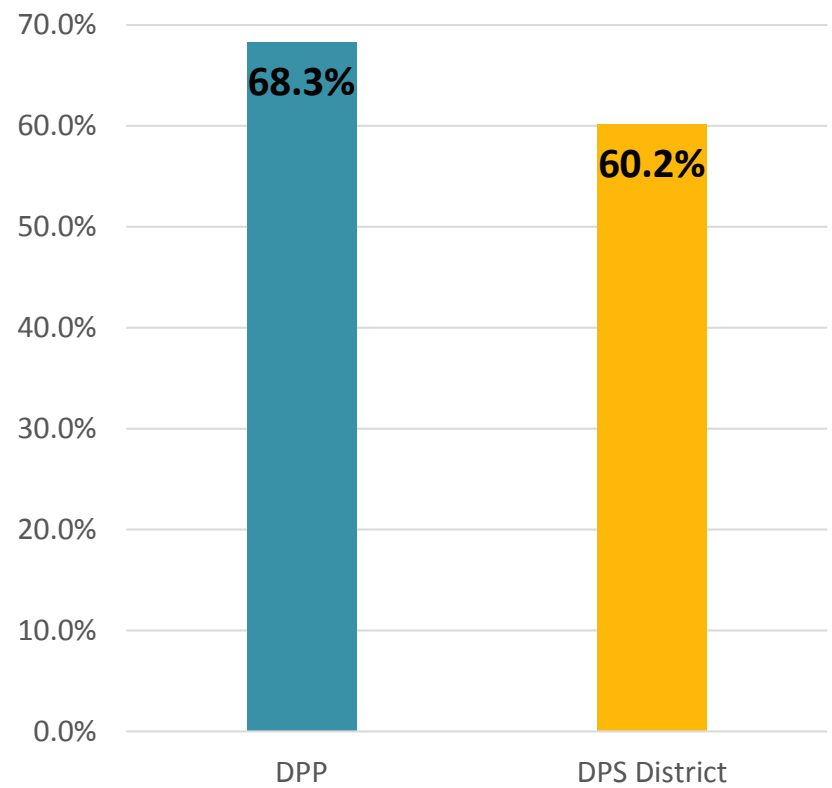
Cohort 1 in 2013-2014

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English –Percentage Scoring Proficient or Advanced



Math – Percentage Scoring Proficient or Advanced

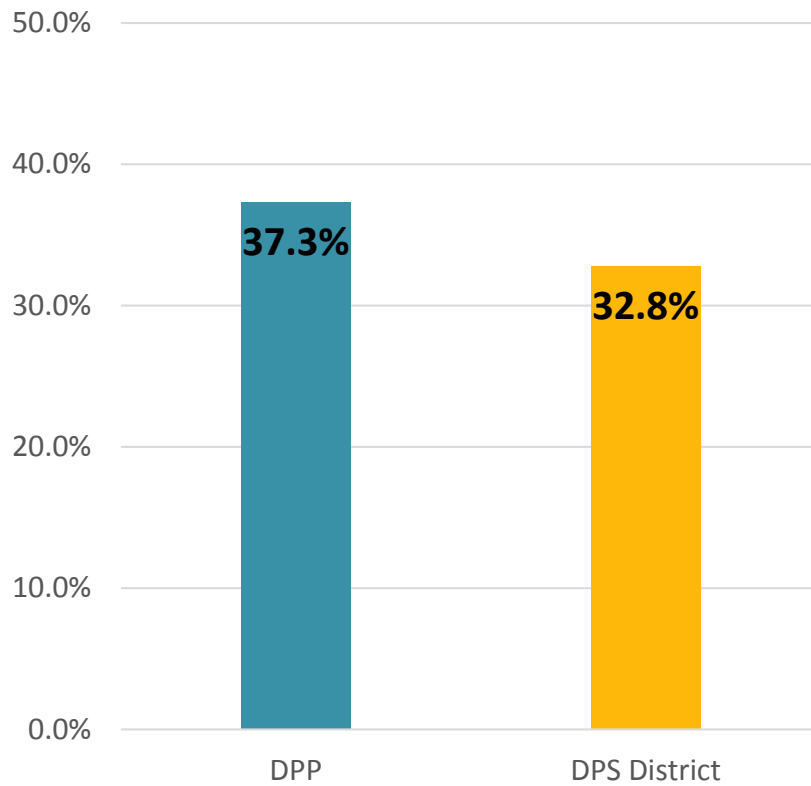


Reading & Math Achievement in Fifth Grade

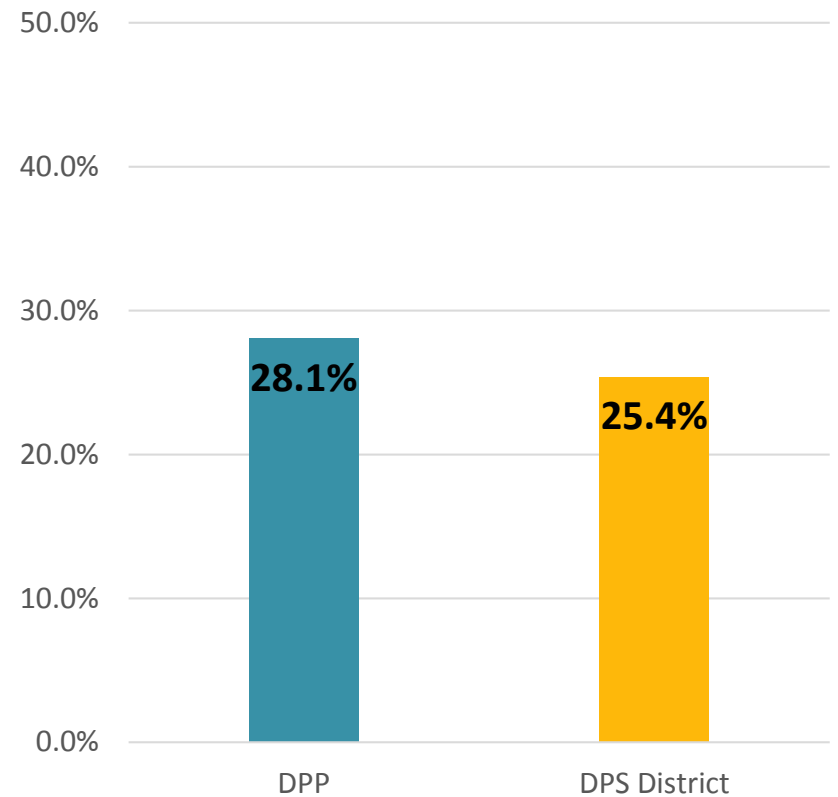
Cohort 1 in 2014-2015

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English – Percentage Met or Exceeded Expectations

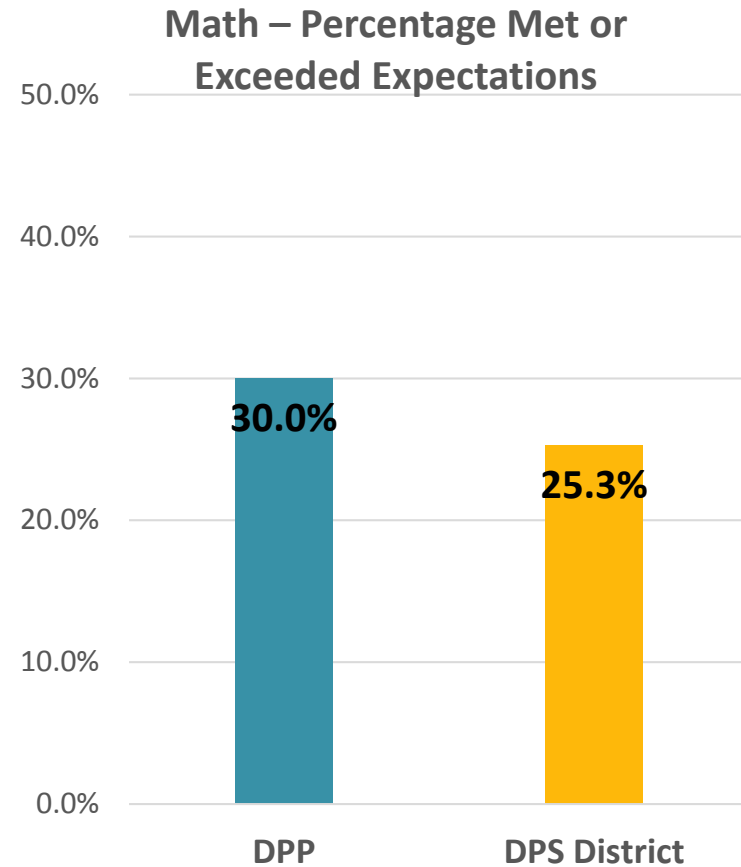
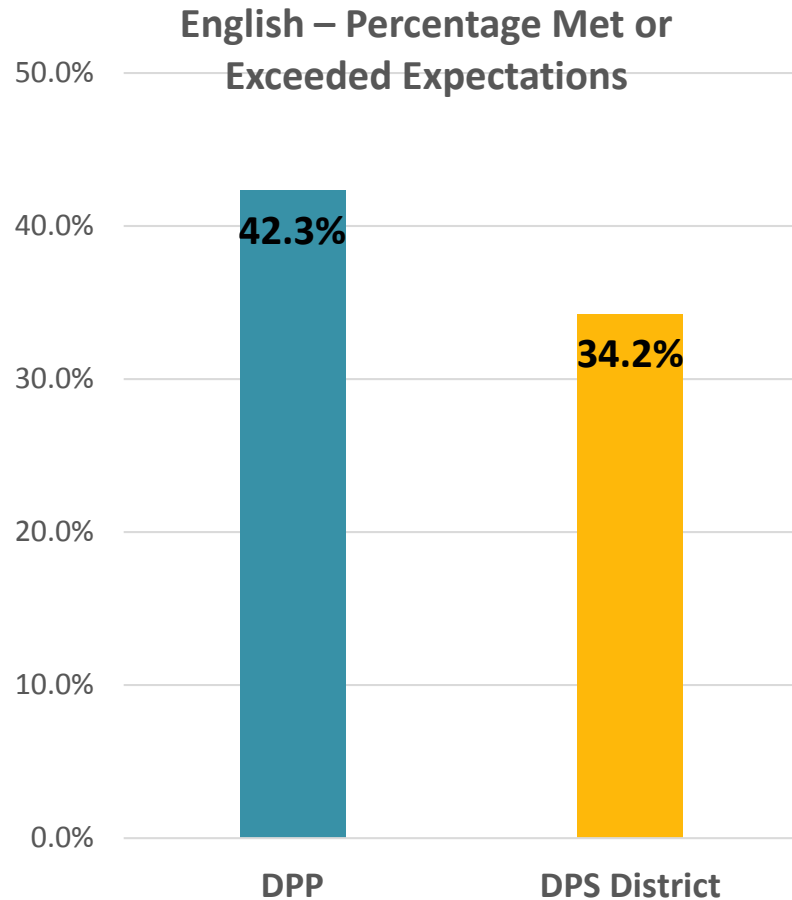


Math – Percentage Met or Exceeded Expectations



Reading & Math Achievement in Sixth Grade *Cohort 1 in 2015-2016*

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Summary of Cohort 8 Kindergarten Readiness Results

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- DPP children tend to attend very high-quality preschools.
- Children make progress during their DPP year above and beyond what you'd expect simply by growing older, and for Cohort 8 it was focused on vocabulary and literacy.
- Children of lower income tiers and whose primary language is not English, fared poorly on English assessments but do well on Spanish.

Summary of Longitudinal Results

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- Children's readiness at the end of the Pre-K year is strongly linked to their later performance in elementary school.
- This means our measures are a good indication of readiness as we intended.
- DPP Students in Cohort 1 maintained their "advantage" through sixth grade. This pattern is also seen for the other cohorts.