

Colorado Preschool Program

Legislative Report 2020

Submitted to: Colorado General Assembly
By: Colorado Department of Education



COLORADO
Department of Education



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Colorado Preschool Program Sees Continued Growth

Since it was established by the Colorado General Assembly in 1988, the Colorado Preschool Program (CPP) has grown from providing 1,933 preschool positions in its first year to 29,360 positions this past year. In total, CPP has served over 400,000 children and continues to produce long-lasting positive outcomes. The program will continue to expand with the passage of House Bill 19-1262 last year, which funded voluntary full-day kindergarten for all Colorado children. This action enabled more CPP positions that were previously used for full-day kindergarten to be used for preschool access for even more 3- and 4-year-old children.



This year's report provides information on the program's growth in enrollment and financing. In addition, we recognize several positive outcomes for participating students, including reduced grade retention, higher scores on the Colorado Measures of Academic Success (CMAS) assessments, fewer students with significant reading deficiencies, and ultimately, more students graduating on time.

The Colorado Department of Education's vision is for all students to graduate from high school ready for college and careers and prepared to be productive citizens of our state. High-quality early learning experiences provide a strong foundation for students to succeed throughout their education, which is why "Strong Foundations" is one of the department's most important initiatives. This pillar of our strategic plan focuses on supporting our youngest students and their educators, and establishing partnerships with families, schools, and communities. CDE has also committed to stronger connection of its efforts across preschool through third grade (P-3) systems. We believe this integrated approach will build upon the success of CPP and help more students stay on track for school success.

Together with families, schools, and community partners, CPP is part of a rich tapestry of early childhood care and education in Colorado. We thank our partners for helping us weave the fabric of early learning and development in our state. I am grateful to state policy makers for the foresight and vision they demonstrated more than 30 years ago with their investment in our youngest learners.

Respectfully,

A handwritten signature in black ink that reads "Katy Anthes".

Katy Anthes, Ph.D.
Commissioner of Education



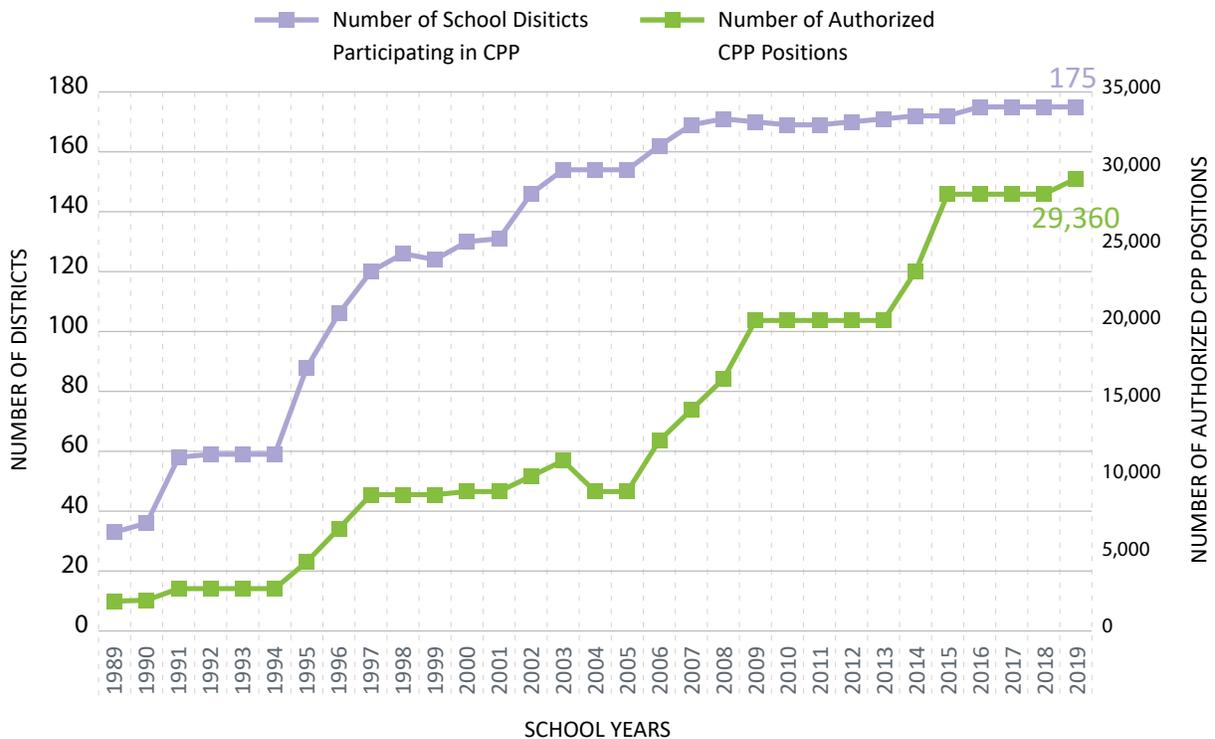
A Brief History of the Colorado Preschool Program

Now in its 31st year, CPP provides funding for up to 29,360 children annually for preschool education, having served more than 400,000 children since its inception.

CPP is a state-funded preschool program administered by the Colorado Department of Education (CDE). The Colorado General Assembly created CPP in 1988 in an effort to provide high-quality preschool opportunities for children who have risk factors in their lives that are associated with later challenges in school. Children served by CPP attend high-quality early childhood programs located in district-operated preschools, local child care centers, community-based preschools, or Head Start programs.

In the program’s first year, CPP provided funding for 1,933 children in 33 school districts. Between 1994 and 2002, the program expanded from 2,750 to 11,050 positions with further expansions occurring in the 2000s to create funding for 20,160 children. In 2013, the General Assembly again expanded CPP with 3,200 additional positions through the Early Childhood At-Risk Enhancement (ECARE) program. ECARE positions have allowed districts the flexibility to serve CPP-eligible children in either half- or full-day preschool or full-day kindergarten. In 2014 and 2018, an additional 5,000 and 1,000 ECARE positions, respectively, were added to the program. By the end of the 2018-19 school year, CPP provided funding for up to 29,360 positions in 175 school districts. Since the state’s commitment to fully funding full-day kindergarten for all children, all ECARE positions have been devoted exclusively to preschool beginning in the 2019-20 school year. Figure 1 illustrates the growth of CPP funded positions and participating school districts.¹

Figure 1: Growth in CPP Authorized Positions and Participating School Districts



¹ For this report, CPP is generally inclusive of ECARE positions.

Colorado Preschool Program by the Numbers

CPP Eligibility

Children eligible for CPP must be between the ages of three and five and have specific risk factors associated with their lives. To be eligible for CPP, children who are 3 years old must have three risk factors whereas 4- and 5-year-olds need to have only one risk factor and not be age-eligible for kindergarten in their school district. It is the responsibility of the school district to establish a clear policy determining child eligibility to ensure that the program serves preschoolers with the highest need.

The CPP Act defines 10 risk factors under which children may qualify for CPP. School districts may use additional research-supported eligibility criteria beyond those in legislation so long as the expanded criteria are unique to the community and demonstrate how the additional risk factors affects a child's ability to be successful in school.² For the 2018-19 school year, 25 districts (14 percent of districts participating in CPP) reported using risk factors not explicitly identified in statute, such as parental military deployment. In Figure 2, each row shows the percentage of children served in CPP in 2018-19 with each of the legislatively defined risk factors. Because 4-year-olds may qualify with more than one risk factor, and 3-year-olds must be identified with at least three risk factors, the percentages total more than 100 percent.

Quick-Reference Statistics (2018-19)

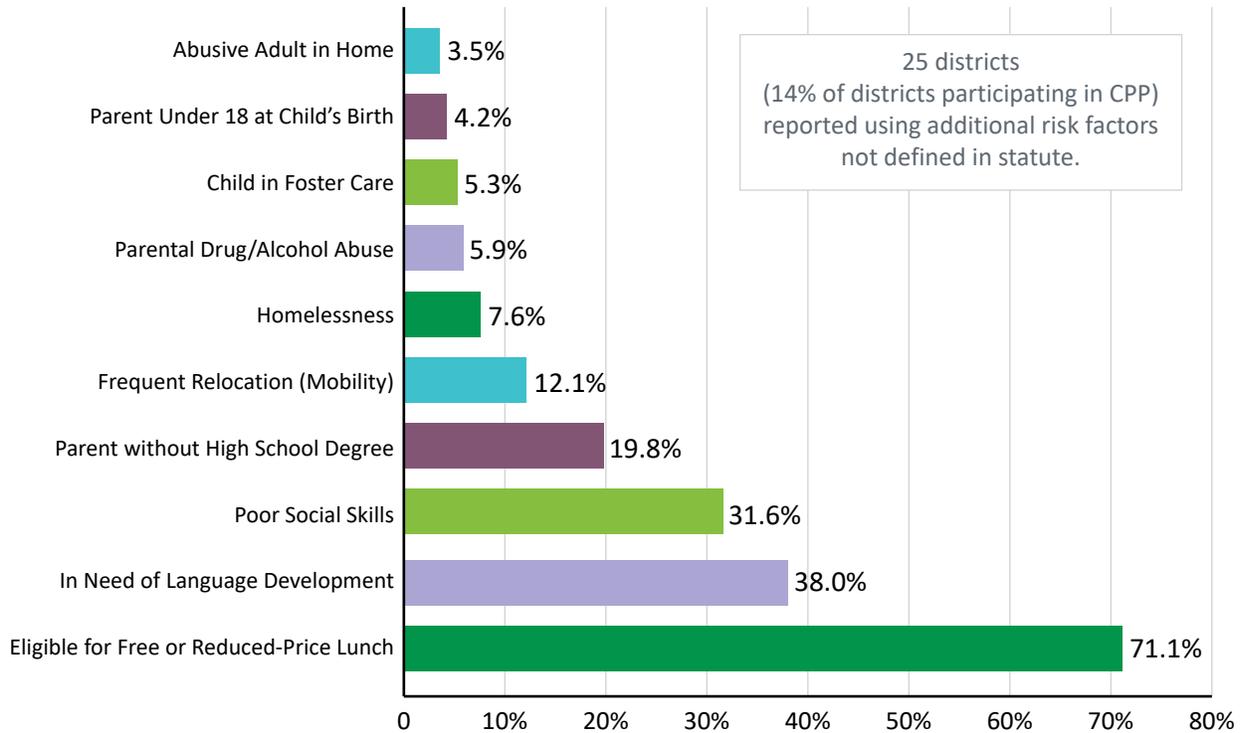
- 29,360 total authorized CPP positions
- 27,530 total children served in CPP
- 1,829 children served with two CPP positions for full-day services (12 percent of positions/7 percent of funded children)
- 5,586 ECARE positions used for full-day kindergarten (19 percent of all CPP positions/20 percent of all preschoolers and kindergarteners funded by CPP)
- 175 out of 179 school districts participating in CPP
- \$122.5 million in total program funding
- \$4,171 average funding per CPP position (\$4,448 average funding per child)



² C.R.S. § 22-28-105(2)(i)

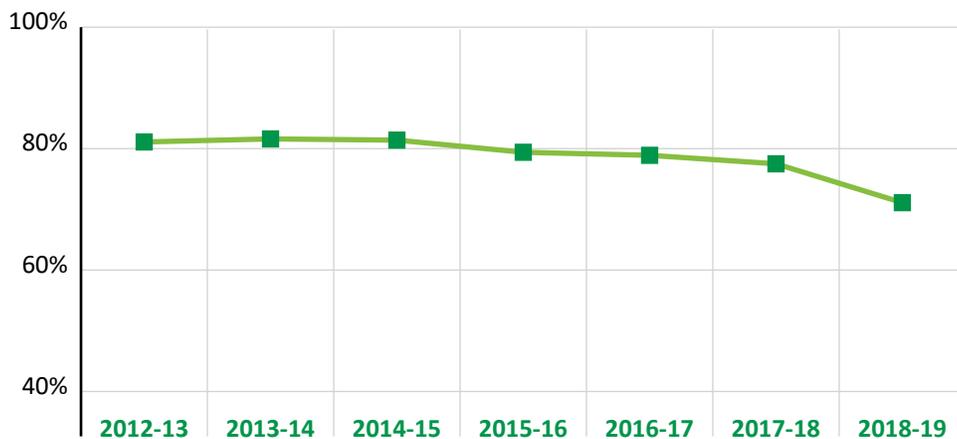
Figure 2: CPP Eligibility Risk Factors (2018-19)

Each line represents the percentage of children served in CPP with that reported risk factor



The percentage of children reported as qualifying for CPP based on eligibility for free- or reduced-price lunch (FRL) has been declining each year since 2014-15 (Figure 3). This may be due to the overall decline in the FRL rate among children in grades P-12 as well as improved practices among school districts in identifying children who may qualify for CPP based on factors other than FRL eligibility.

Figure 3: Trend in Children Qualifying for CPP Based on FRL Eligibility



Estimating Unmet Need for CPP Among Eligible Children

Using population estimates from school district enrollment counts and eligibility data from CPP district annual reports, CDE estimates that 47,050 potentially eligible 3- and 4-year-olds were not enrolled in the program in the 2018-19 school year (61.5 percent of the total estimated eligible 3- and 4-year-olds).

CDE estimates there are **76,410 3- and 4-year-olds** eligible for CPP in Colorado. Currently, there are **29,360 CPP half-day positions available for 3- and 4-year-olds**. Assuming all CPP positions are used maximally to serve preschoolers with half-day funding, this leaves **47,050 potentially eligible children not enrolled in the program**.³ Because some children have greater needs, current statute allows some CPP slots to be combined to fund full-day preschool services. In 2018-19, **3,658 positions were combined** in this way to serve 1,829 children for a total of **27,530 children served by CPP**.⁴ Decisions about whether to combine two CPP positions are locally determined and fluctuate from year to

Unmet Need Estimate vs. Wait List

In this report, CDE provides an estimate of unmet need for CPP as opposed to wait list figures. Not all school districts report the full eligible population to CDE, and the state does not systematically collect this data across all school districts. Data reported to CDE in the pupil count should not be considered a representation of all children who are potentially eligible to be served in those districts.



³ As outlined in the CPP eligibility section of this report, 3-year-olds must have three risk factors in order to qualify for CPP. Therefore, relatively fewer 3-year-olds are eligible for CPP compared to 4-year-olds. CDE cannot estimate this difference, but it likely would bring the overall estimate of unmet need down.

⁴ One CPP position was not funded due to a district's uncorrected fall pupil count submission error.



year, although there is a 5 percent overall cap on the number of standard CPP (non-ECARE) positions that can be used this way. If the unmet need estimate accounted for children using two CPP positions, the estimate would increase. However, some 3- and 4-year-olds included in the estimates of unmet need for CPP may already be receiving state-funded preschool through special education funds.

Head Start is another major source of preschool funding for many Colorado children. In 2017-18, **Head Start served 9,397 3- and 4-year-olds** in Colorado. Subtracting this figure from 47,050 — the overall estimate of unmet need — leaves **37,653 potentially eligible children not served by CPP or Head Start.**⁵

Table 1 summarizes these scenarios depending on whether Head Start is factored in.

3-Year-Olds in CPP

In 2018-19, out of 27,530 children served by CPP, 6,328 (23 percent) were younger than 4 years old. This proportion has remained fairly consistent over the last several years.



Table 1: Estimated Number of Potentially Eligible Children Not Served by Publicly Funded Preschool

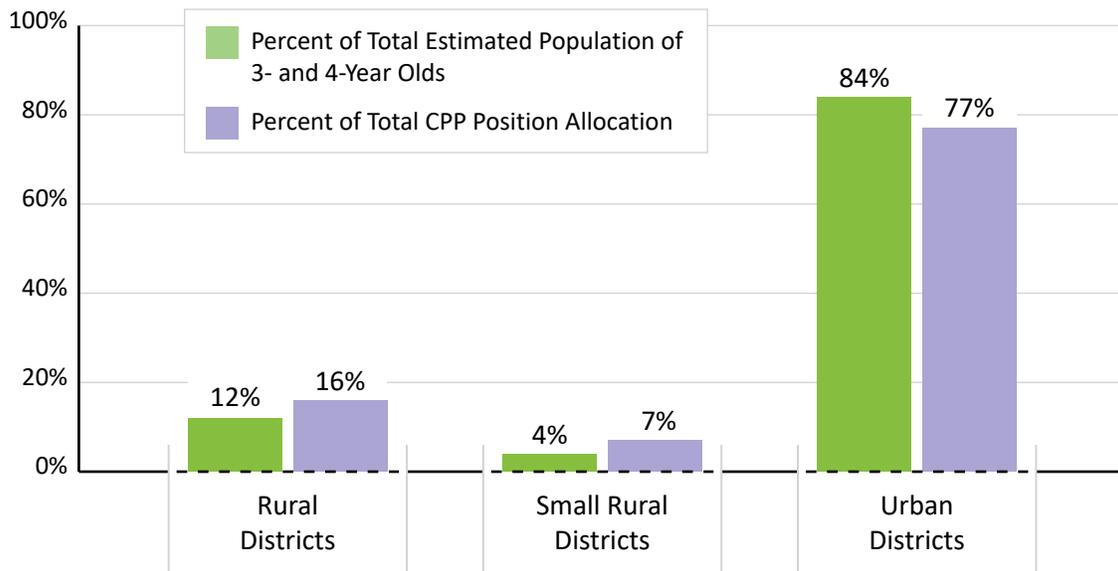
	HEAD START FACTORED IN	HEAD START NOT FACTORED IN
Estimated Potentially Eligible Unserved 3- and 4-Year-Olds	37,653	47,050

⁵ This estimate assumes that children who are eligible for Head Start may also be eligible for CPP due to similar income eligibility provisions. However, CDE is unable to estimate children dually enrolled in CPP and Head Start. If CDE’s estimate could account for these children, it would raise the estimated number of eligible children not enrolled in either program.

Colorado Preschool Program Enrollment by Urban/Rural Areas

As shown in Figure 4, CDE estimates that 12 percent of the 3- and 4-year-olds in Colorado reside in rural school districts, yet 16 percent of the CPP positions are allocated to rural districts. Similarly, 4 percent of the population is estimated to reside in small rural districts, yet 7 percent of the positions are allocated to small rural districts. Conversely, an estimated 84 percent of the population resides in urban districts and 77 percent of the positions are allocated to urban districts.⁶

Figure 4: CPP Position Allocation Compared to Estimated Population of 3- and 4-Year-Olds

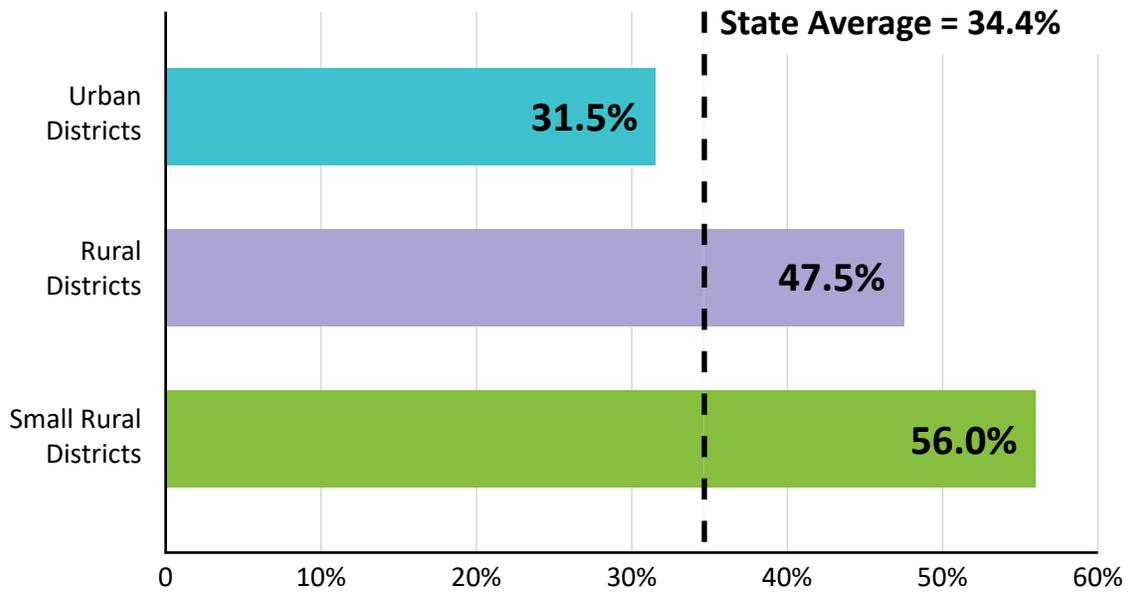


⁶ Source for estimated 3- and 4-year-old population: Colorado State Demography Office.



Moreover, CPP serves a higher proportion of the estimated eligible population in small rural and rural districts than urban districts. This is primarily due to the need to allocate a minimum number of CPP positions to each participating district in order to generate enough revenue to fund teacher salaries and run the program, which can raise the proportion of the eligible population served in small districts compared to large districts. Overall, CDE estimates that CPP serves 34 percent of potentially eligible 3- and 4-year-olds statewide compared to 56 percent of potentially eligible children in small rural districts and 48 percent in rural districts as illustrated in Figure 5.

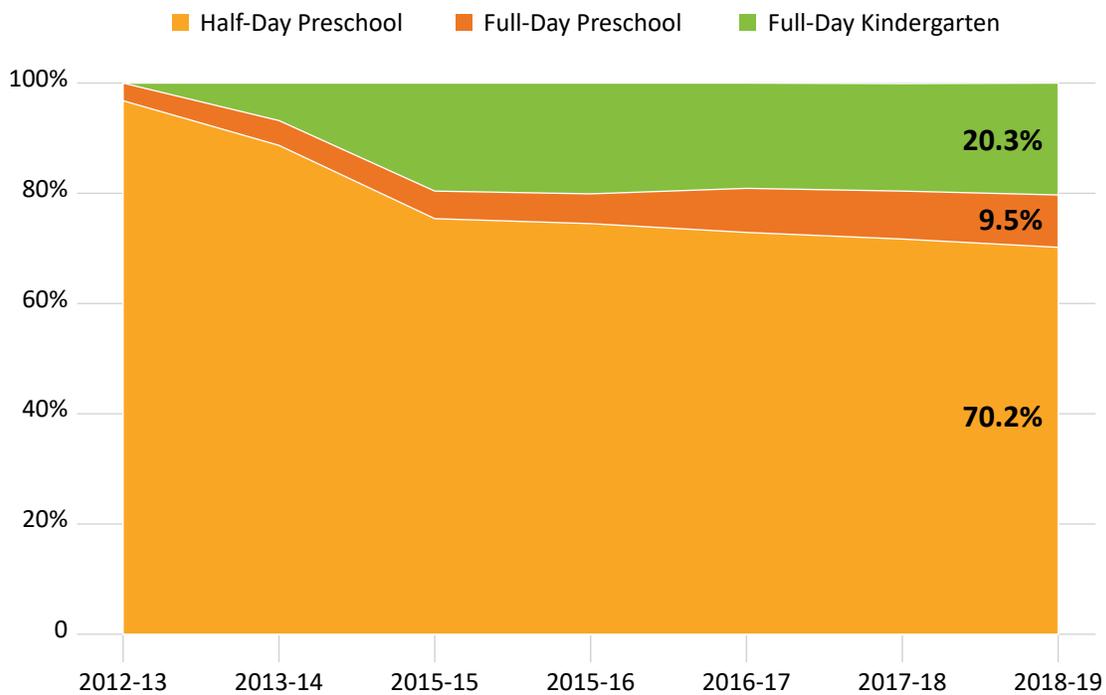
Figure 5: Estimated Percent of Potentially Eligible 3- and 4-year-olds Served by CPP



Colorado Preschool Program Enrollment by Length of Day

As noted in Figure 6, more children were funded using two CPP/ECARE positions to fund full-day preschool in 2018-19 compared to several years ago. District leaders report this change reflects the increased level of preschool programming requested by families. Districts report that some families with eligible children decline preschool enrollment because they are unable to access part-day and part-year programming when their need is for full-time programs. Full-day programming opportunities offered by school districts, and by extension, through local community providers and Head Start programs, increase continuity of care and access to service and instructional time for children most at risk of school failure. It is important to note that with the passage of House Bill 19-1262, all CPP positions will be used for preschool going forward.

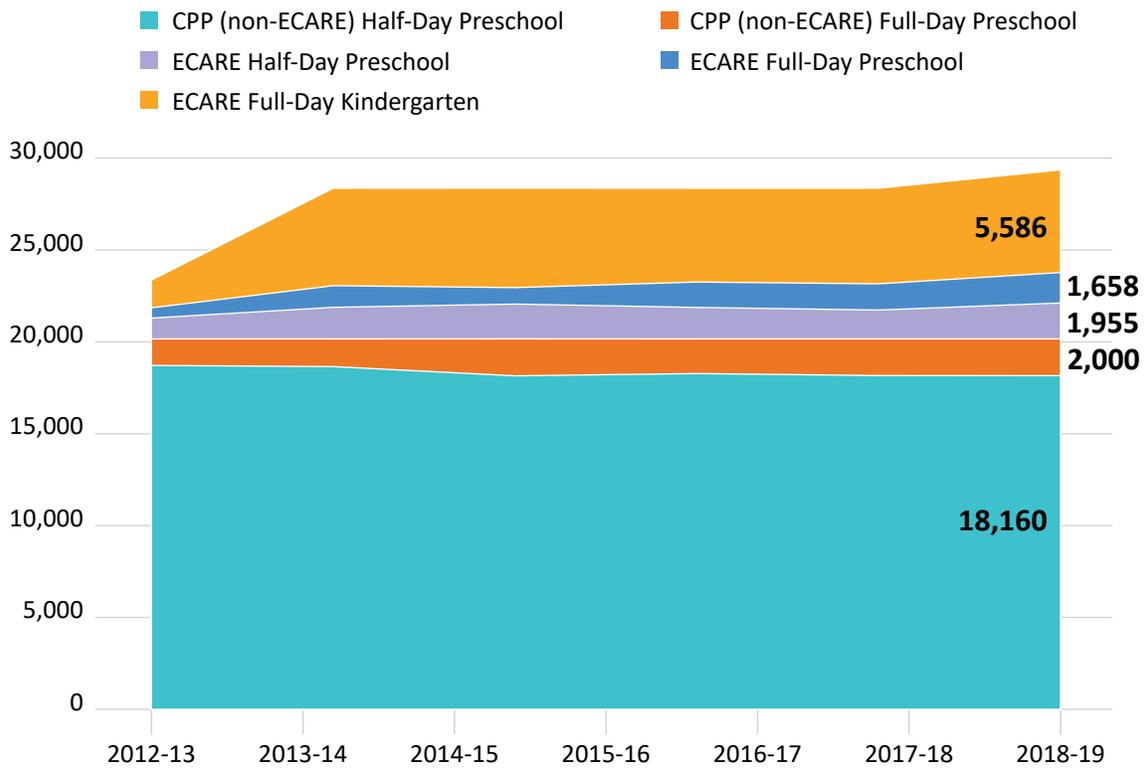
Figure 6: CPP Enrollment by Length of Day (2018-19)



ECARE Positions

Early Childhood At-Risk Enhancement (ECARE) positions under the CPP Act provide more flexible programming options for districts. Between the 2013-14 and 2018-19 school years, districts with ECARE positions had the flexibility to serve CPP-eligible children in either half-day preschool, full-day preschool, or full-day kindergarten. Each year since ECARE positions were introduced, school districts have chosen to use the majority of ECARE positions for full-day kindergarten. With the passage House Bill 19-1262, all ECARE positions for the 2019-20 school year have been diverted to preschool with the continued flexibility for providing half-day or full-day preschool.

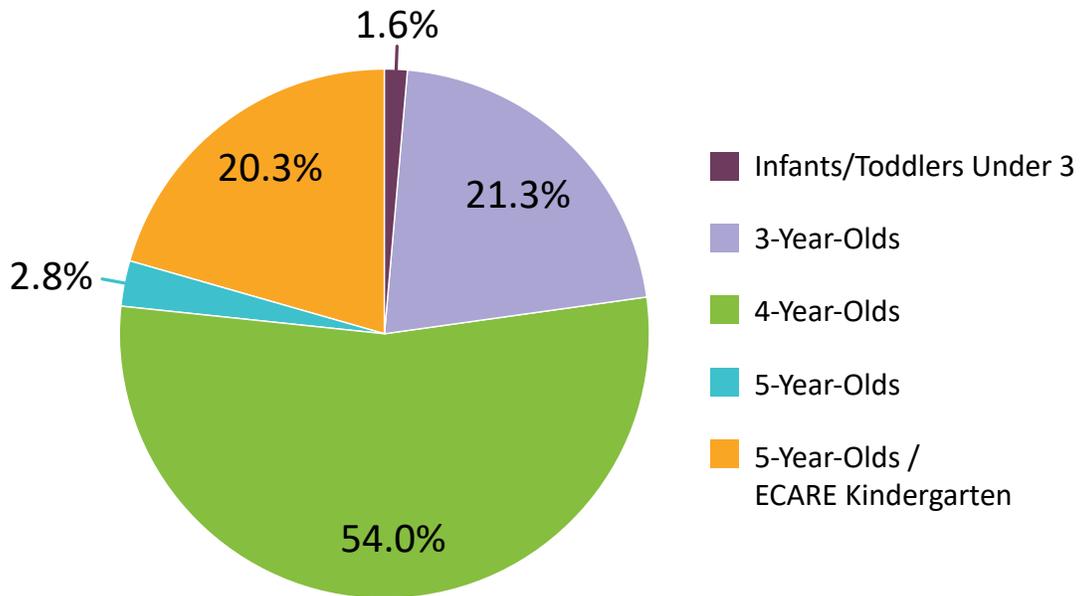
Figure 7: CPP and ECARE Position Utilization over Time



As illustrated in Figure 8, 54 percent of children funded by CPP (including ECARE) were 4-year-olds while about 23 percent were younger than 4. Some districts are able to serve children younger than 3 years old through a waiver granted at the initiation of CPP. This option is no longer statutorily available to other districts.

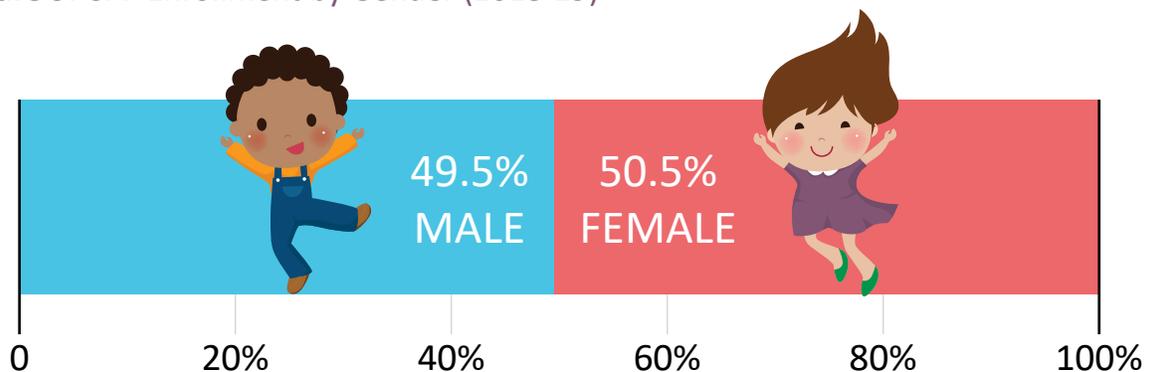
Eligible children who turn 3 years old on or before the school district’s kindergarten cutoff date may be served in CPP for two years, while those who turn 4 years old on or before the district’s kindergarten cutoff date may be served in CPP during the year prior to kindergarten entry. Only 3 percent of children in CPP were 5 years old as a preschooler while 20 percent were 5 years old in kindergarten using ECARE positions.⁷

Figure 8: CPP Enrollment by Age (2018-19)



The number of males and females funded by CPP is about equal as shown in Figure 9. This balance has been consistent over many years.

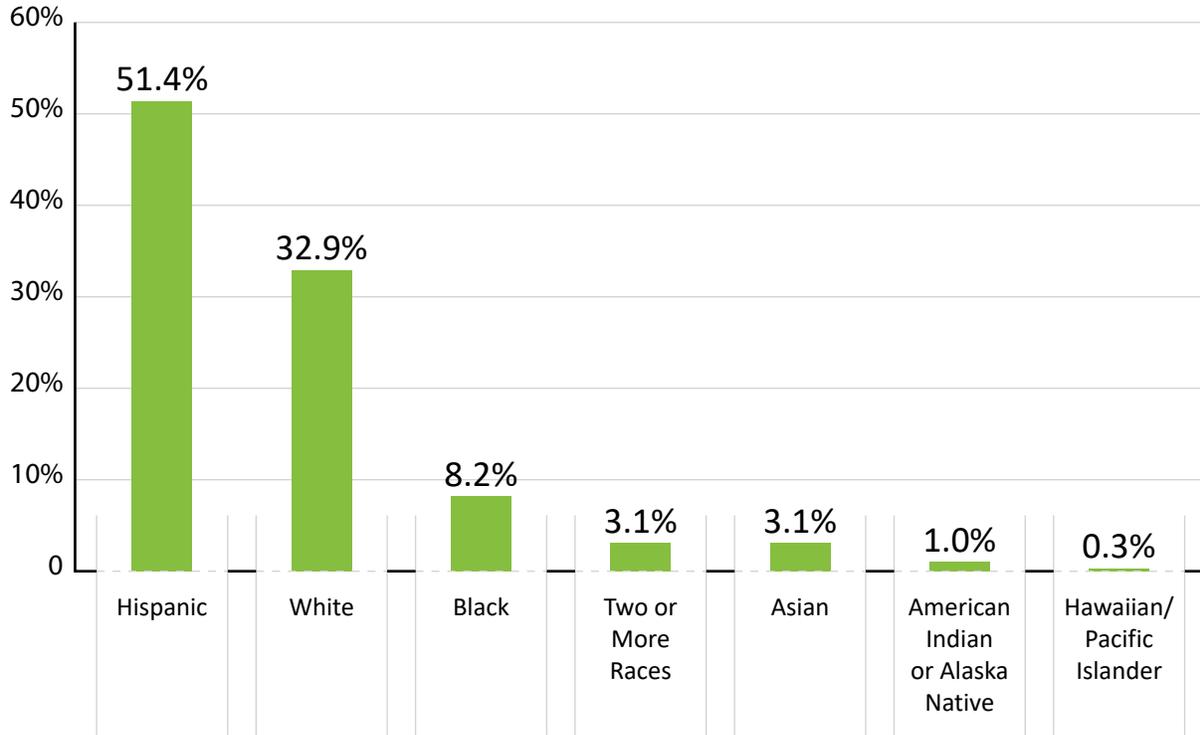
Figure 9: CPP Enrollment by Gender (2018-19)



⁷ Children reported as five-year-olds in preschool were those who missed the kindergarten cutoff date in a school district with a cutoff date earlier than October 1.

As shown in Figure 10, the majority of children funded by CPP are Hispanic. One-third of children are white, while the remaining children (15.7 percent) are other races or identify as two or more races. This general composition has been consistent over many years.

Figure 10: CPP Enrollment by Race/Ethnicity (2018-19)



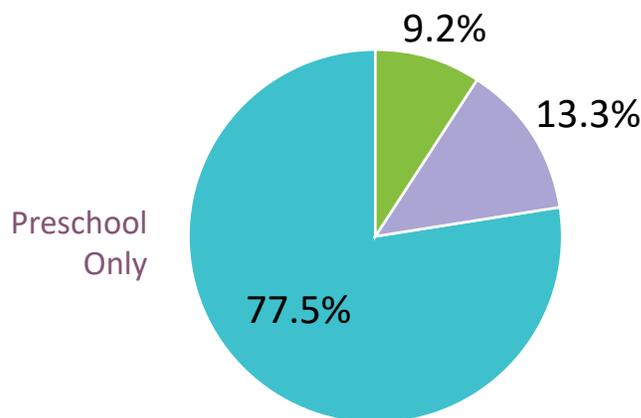
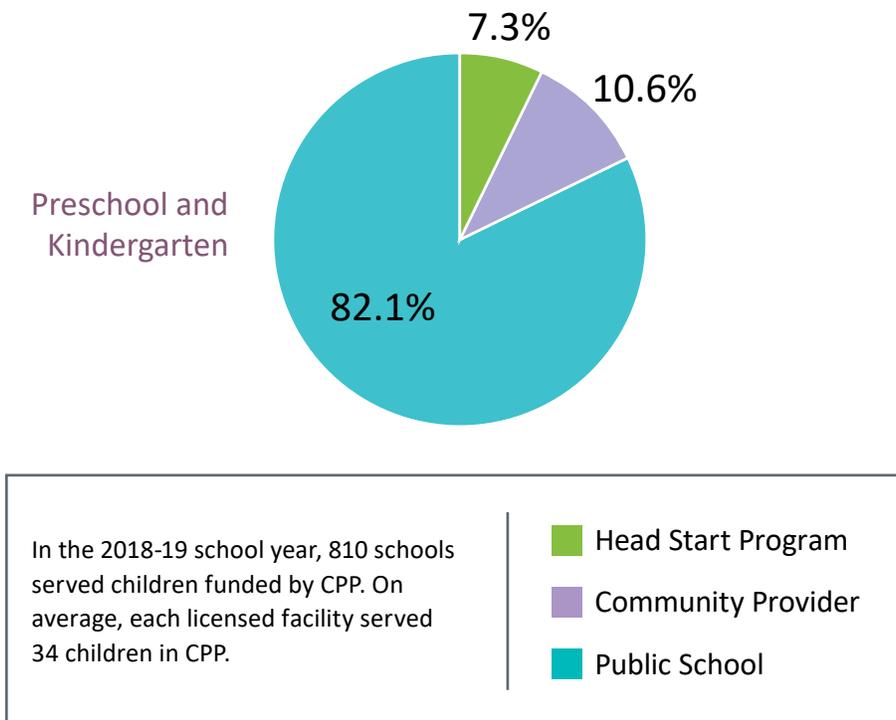


Colorado Preschool Program Enrollment by Setting

The CPP Act recognizes the significant value of partnering with community-based child care agencies, Head Start programs, and other non-public schools. As of the 2018-19 school year, 17.9 percent of all children in CPP were served in non-public school programs under agreements with school districts. However, all children receiving ECARE funding for full-day kindergarten attended public schools. When looking at only preschoolers in CPP, 22.5 percent were served in non-public schools. CDE is working with districts to identify and remove barriers and supporting additional partnerships between school districts and community partner sites, when available, within local communities. Figure 11 shows enrollment by setting.

Figure 11: CPP/ECARE Enrollment by Setting (2018-19)

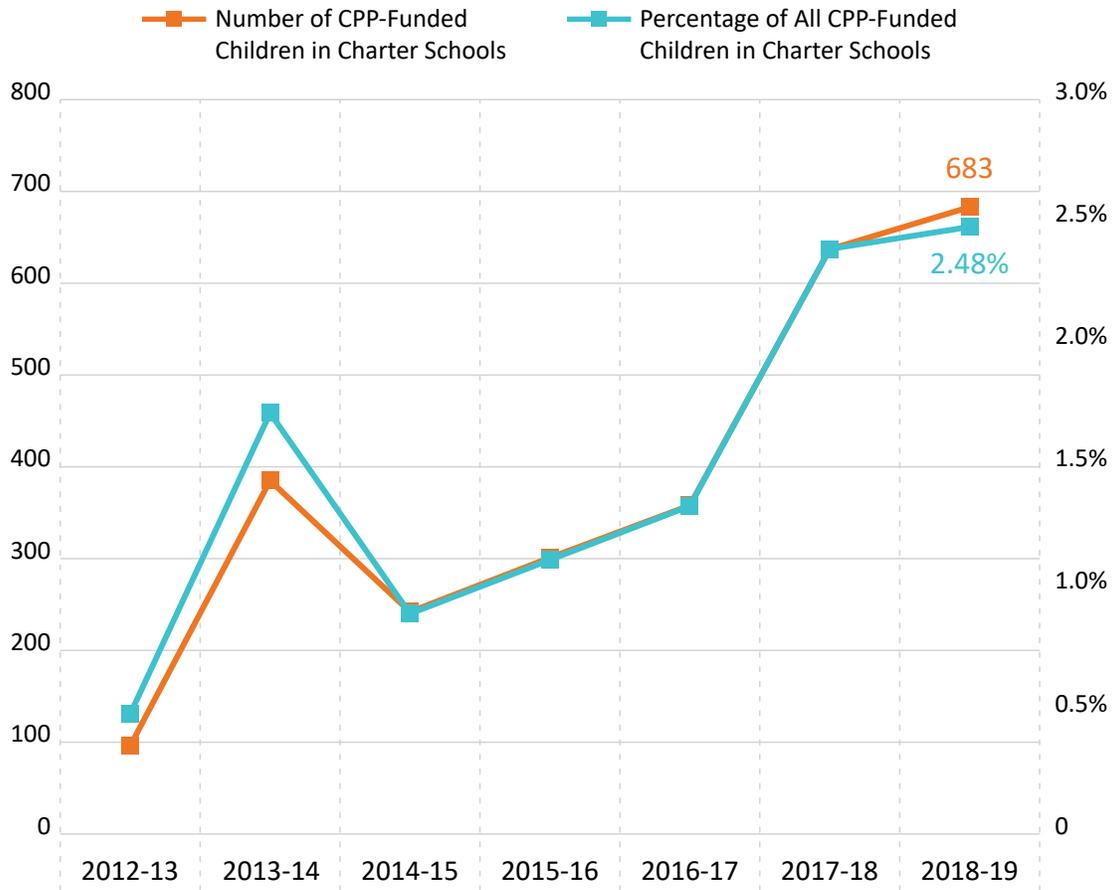
Percentages represent the proportion of children in CPP served in each setting



Charter School Participation in CPP

CPP values its partnership with charter schools as part of a broad mixed-delivery system. Charter school participation in CPP has grown over the last several years, reflecting increased partnerships between local school districts and charter schools. From 2012-13 to 2018-19, the number of children funded by CPP at charter schools increased from 96 to 683 (0.49 percent to 2.48 percent of all children funded by CPP) as shown in Figure 12. In 2018-19, 22 charter schools across seven school districts and the Charter School Institute participated in CPP.

Figure 12: Growth in Charter School Participation in CPP



Colorado Shines and CPP

High Quality Preschool and the Colorado Shines Quality Rating and Improvement System

To be eligible for CPP funding, preschool programs are required to be licensed through Colorado Department of Human Services (CDHS) Child Care Licensing. Licensing through CDHS means a program meets health and safety standards and receives regular monitoring. The state now blends a basic compliance model with a more robust quality rating system called Colorado Shines. All preschool programs are rated on a scale of Levels 1 to 5. Level 1 in Colorado Shines is required and indicates that a program is currently licensed with CDHS while Level 5 indicates programs of the highest quality. Each program has the flexibility to set its own pace for quality improvement advances through Colorado Shines.

To determine the level of quality of early care and education programs, Colorado Shines evaluates how each organization:

- 1 Supports children's health and safety
- 2 Ensures their early childhood professionals are well-trained, effective, and appropriately compensated
- 3 Provides a supportive, play-based learning environment that increases children's skills in all areas of development, with a focus on social and emotional learning for future school and life success
- 4 Helps parents become partners in their child's learning
- 5 Demonstrates strong leadership and business practices



**COLORADO
SHINES**

**START EARLY
START STRONG
QUALITY EARLY LEARNING**

“Our program makes many improvements as a result of the reviews of the [Colorado Shines] ratings in each area from the assessment. Programmatic improvements vary from purchasing targeted materials and equipment, professional learning opportunities for staff, and enhanced family engagement procedures.”

—Aurora Public Schools

Colorado Shines: Alternative Pathways for School District-Operated Preschool Programs

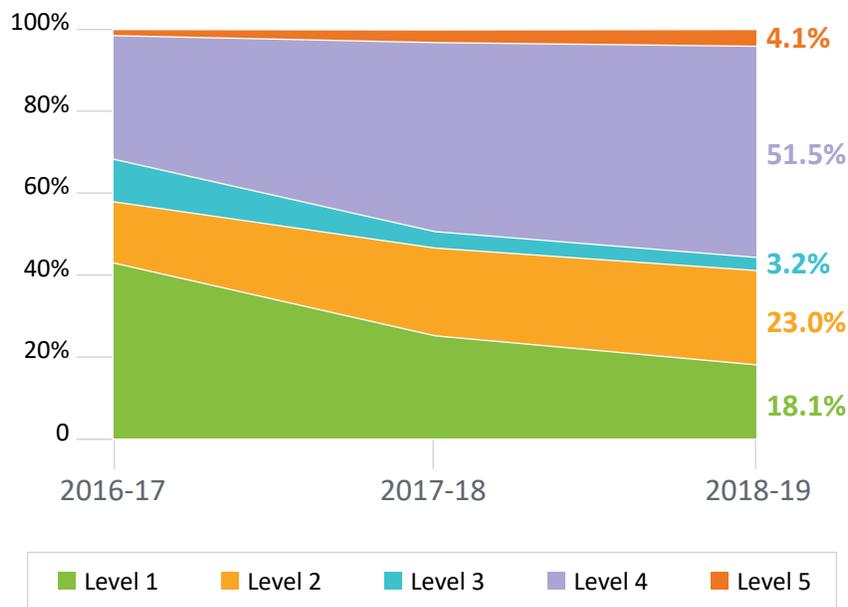


**COLORADO
SHINES**
START EARLY
START STRONG
QUALITY EARLY LEARNING

CDE encourages programs to pursue full participation in Colorado Shines and has worked with CDHS to create an alternative pathway to facilitate and support district participation. Colorado Shines allows school districts to submit documentation for all buildings where they operate preschool programs. This offers districts an alternative pathway that streamlines the normal process of each individual program submitting their own documentation. Programs who are approved under this option are eligible for at least a Level 3 rating. This option also allows districts to verify that their internal quality assurance processes for classroom observations meet the Colorado Shines criteria without requiring external raters.

Recent Colorado Shines data show that proportionally more children in CPP are being served in highly rated programs compared to a few years ago (Figure 13).⁸ In 2016-17, most children were served in programs rated as Level 1 whereas most children — more than half — are currently served in programs rated as Level 4 or higher (2018-19). Figure 14 illustrates a similar trend among the programs serving CPP. On the whole, programs serving children in CPP are clearly shifting toward higher levels of quality. This trend is also seen more broadly among all licensed facilities across Colorado, including those not serving children in CPP.

Figure 13: Percentage of Children in CPP among Colorado Shines-Rated Programs



⁸ Some ECARE-funded kindergarteners were in elementary schools not involved in Colorado Shines and are not included in these charts.

Figure 14: Colorado Shines Ratings for CPP-Serving Programs

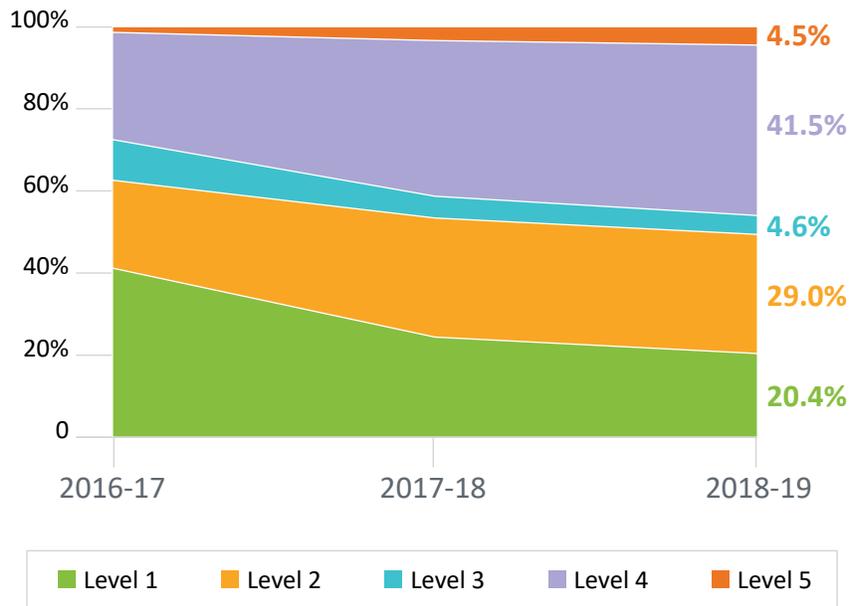
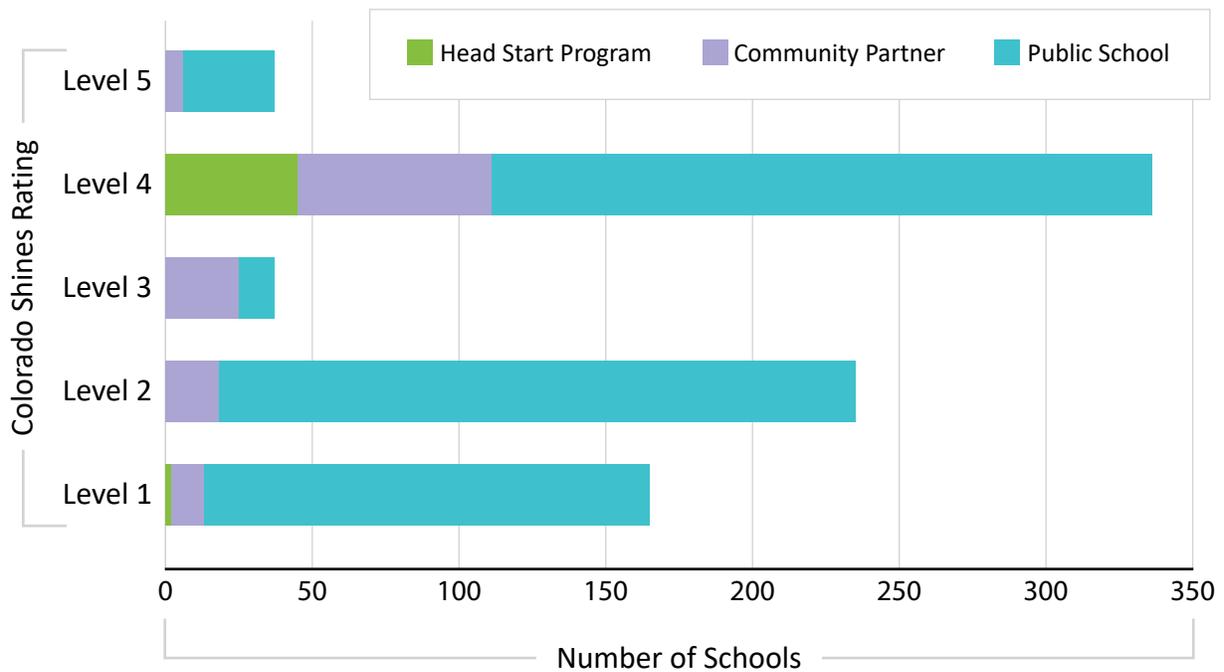
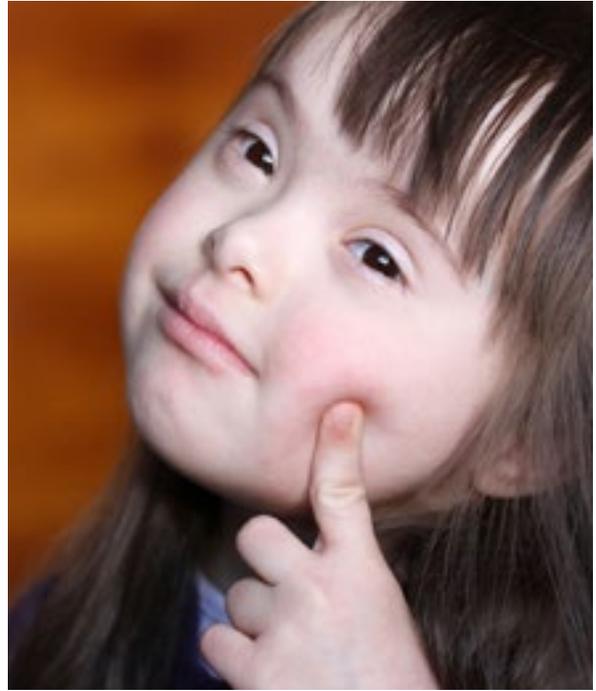


Figure 15 shows the number of public schools, community partners, and Head Start programs providing state-funded preschool to children in CPP at each Colorado Shines level. Among these schools, there are public schools and community partners at every level in Colorado Shines. The majority of CPP community partners (53 percent) are at Level 4. The distribution of quality ratings across public schools is more spread out although most public schools are centered at Level 4 (35 percent), Level 2 (34 percent), and Level 1 (24 percent). The vast majority of Head Start programs serving children in CPP (94 percent) are at Level 4, which largely reflects an alternative Colorado Shines pathway that allows Head Start programs in good standing with the federal Office of Head Start to be automatically rated at Level 4.⁹

Figure 15: Colorado Shines Ratings by Setting among CPP-Serving Schools (2018-19)



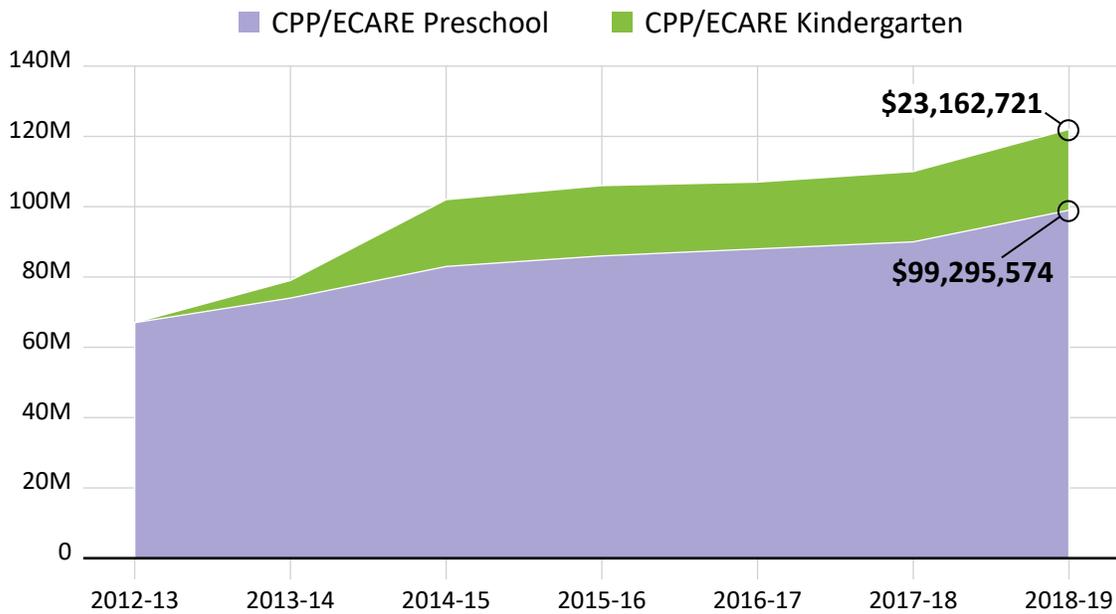
⁹ Head Start programs illustrated here at lower levels may not have submitted the requisite paperwork to attain Level 4.



Funding

As illustrated in Figure 16, the General Assembly allocated \$122,458,295 to CPP in 2018-19¹⁰— an increase of 82 percent since 2012-13. While per-pupil funding has increased (Figures 17 and 18), significant increases in the number of authorized CPP positions (Figure 17) also drove the increase in total program funding over this period. In 2018-19, the program served 27,530 children¹¹ resulting in average state funding per child of \$4,448, or \$4,171 per CPP position, as illustrated in Figures 17 and 18. Of the total program funding, 18.9 percent was used for full-day kindergarten under ECARE. The remaining 81.1 percent went toward preschool.

Figure 16: Total CPP Program Funding



¹⁰ Compared to \$7.2 billion in total funding in grades P-12 (2018-19).

¹¹ Two half-day CPP positions may be used to fund a full day of preschool services for some children, resulting in a lower count than the number of authorized positions (27,530 children versus 29,360 positions).

Figure 17: Number of Children in CPP and Funding per Child

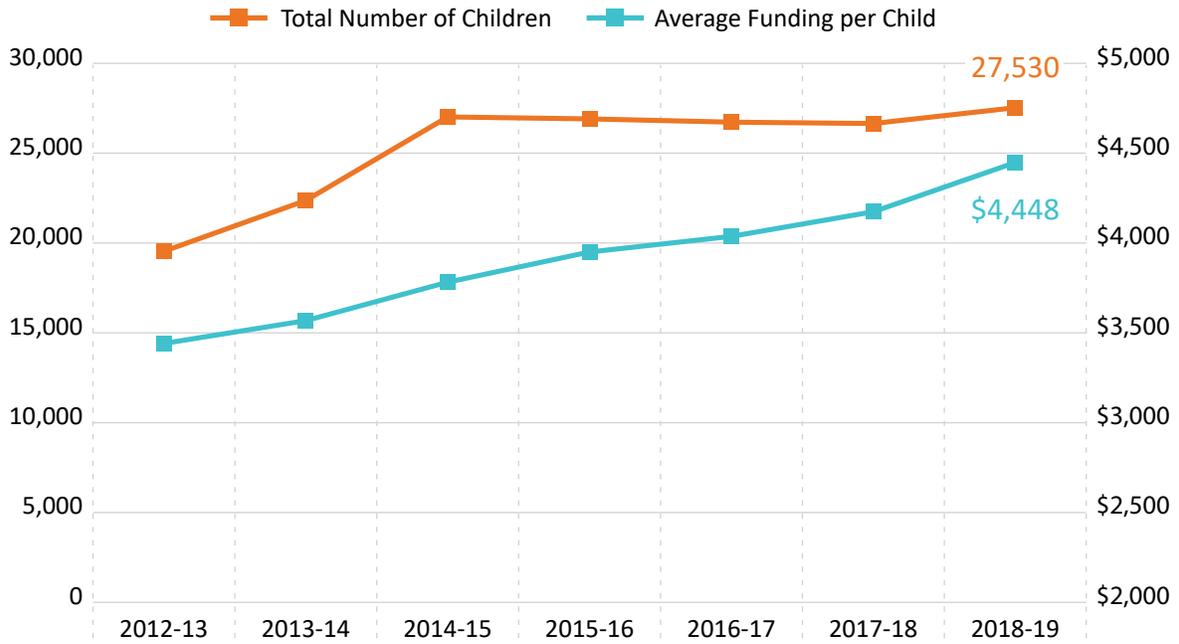
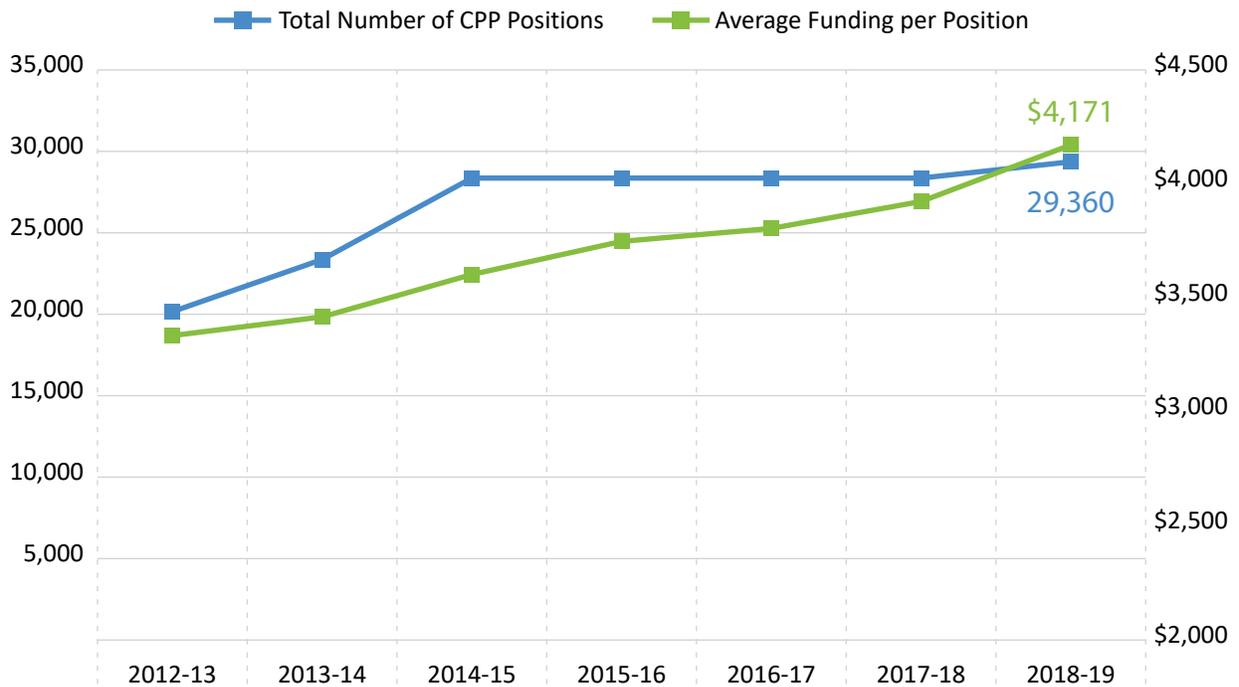
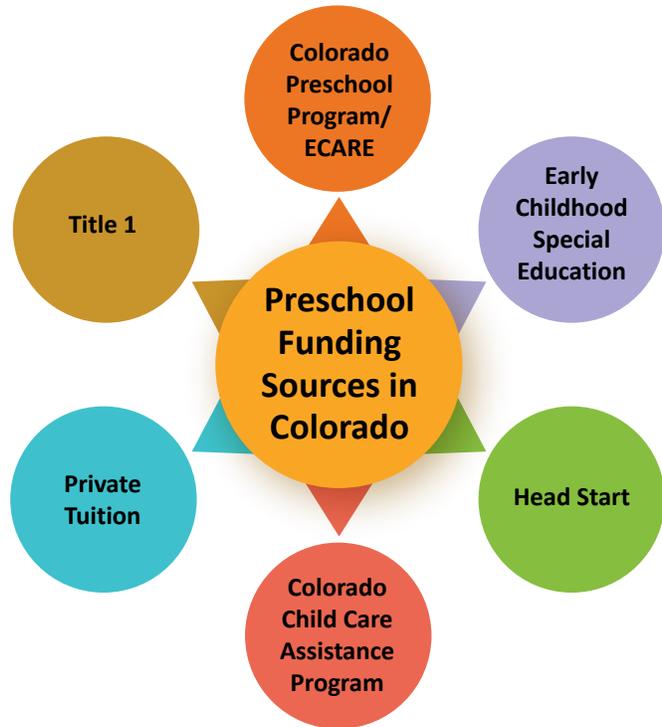


Figure 18: Number of Authorized CPP Positions and Funding per Position



Combining Preschool Funding Resources in Colorado

Most Colorado preschoolers are served in blended classrooms — that is, classrooms of children with high needs (e.g., children with disabilities or from low-income families) alongside typically developing peers who have not been established to have high need or whose families receive financial support. CPP funding is intended to support high-quality, developmentally appropriate educational experiences for children at risk for later school challenges. Each district receives a capped allotment of CPP positions for part of their population in need. The funding is not intended to stretch beyond the children enrolled in CPP to provide universal preschool. Other funding streams, such as early childhood special education funding (including Exceptional Children's Education Act, Individuals with Disabilities Education Act Part B and Section 619 funding), Head Start, Colorado Child Care Assistance Program, Title I, general funds, tuition, and other sources are expected to be used to equitably serve the children represented in preschool classrooms administered by school districts. Accessing only one or two funding sources will rarely enable a program to meet the needs of all families.



Combining multiple early childhood funding sources allows programs to:

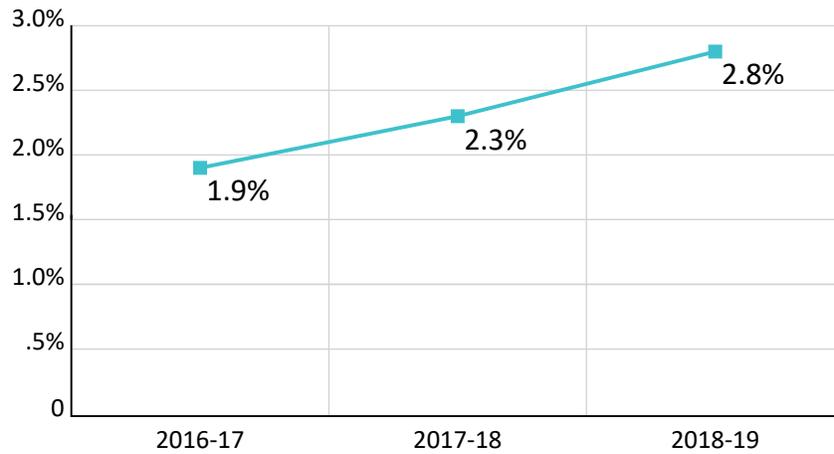
- Increase parental choice by adding full-day and/or extended-day, and/or year-round options
- Increase quality by employing early childhood educators who hold CDE teacher licenses and paying them on parity with K-12 educators
- Provide increased professional development and coursework opportunities for early childhood staff
- Improve the quality of early childhood environments

A chart with more information on the various funding sources used in preschool programs can be found at: <http://www.cde.state.co.us/cpp/ecefundinginco>.

Expanding CPP to Children with Educational Disabilities

CPP prioritizes services for children with the highest need. One such risk factor is identification of an educational disability.¹² Since 2016, districts have been allowed to fund full-day preschool for children who qualify for CPP and special education by combining state per-pupil funding from CPP and preschool special education. In 2018-19, 776 children attended preschool with combined per-pupil funding from CPP and preschool special education. Figure 19 illustrates the growth in use of CPP and preschool special education funds to provide full-day services for students with disabilities.

Figure 19: Percentage of All Children in CPP Who Also Received State Per-Pupil Funding for Preschool Special Education for Combined Full-Day Services



¹² C.R.S. § 22-28-106(a)(1)(IV) and C.C.R. 5.08

2018-19 Annual Outcomes for Students Served by the Colorado Preschool Program

The Results Matter Assessment System

Programs funded through CPP use authentic observational child assessment through a system called Results Matter, which offers educators a menu of tools to measure progress, individualize instruction, and monitor children's growth over the course of the school year. Educators assess children's progress in key areas of learning and development in the course of everyday environments, routines, and activities. Through a combination of children's work samples and assessment scores, teachers are able to paint a unique, detailed view of each child that supports individualized instruction and provides meaningful information to families.

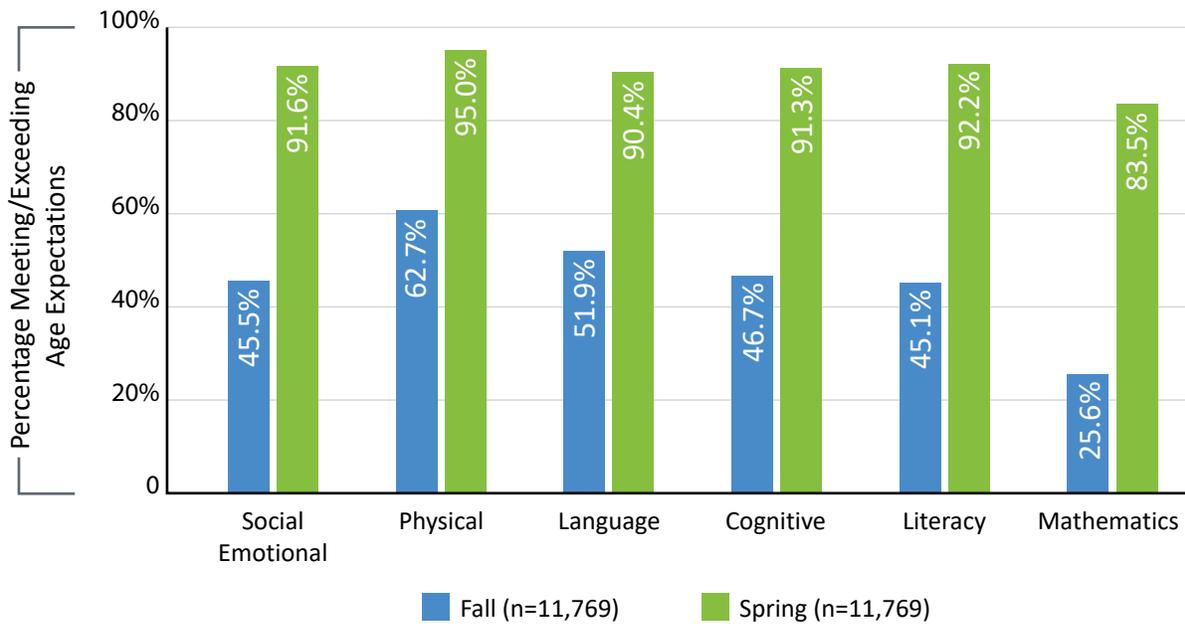
While Results Matter assessment informs teacher practice, it can also provide programs with an overall picture of how children are performing related to widely held expectations of child development throughout the school year in each of six areas: social-emotional, physical, language, cognitive, literacy, and mathematics. Results displayed in Figure 20 demonstrate the growth 4-year-old children funded by CPP made across each area from fall to spring. In each area, children made significant overall gains in learning and development over the course of the school year. In all areas except mathematics, over 90 percent of children either met or exceeded the age expectations by the end of the school year.¹³ While relatively fewer children met or exceeded age expectations in mathematics, the percentage point increase was highest in math (58 percentage points) compared to other areas. The percentage point increase from fall to spring ranged from 34 points (physical) to 58 points (mathematics).

Decision makers at multiple levels use Results Matter data, often in combination with other data, for many purposes, including:

- 1 Planning individual and class-wide instruction
- 2 Communicating with families
- 3 Supplementing educational experiences at home
- 4 Planning classroom and program-wide improvement strategies
- 5 Allocating resources
- 6 Accountability reporting and program evaluation

¹³ Approximately 346 4-year-olds in CPP were assessed using a different tool and are not reported here.

Figure 20: Percentage of 4-Year-Olds in CPP Meeting or Exceeding Age Expectations (2018-19)



“We recognize strong child growth in academic as well as social/emotional domains is needed for kindergarten readiness and success.”

—Wiggins Preschool



Results Matter Assessment Results: Disaggregated Trends

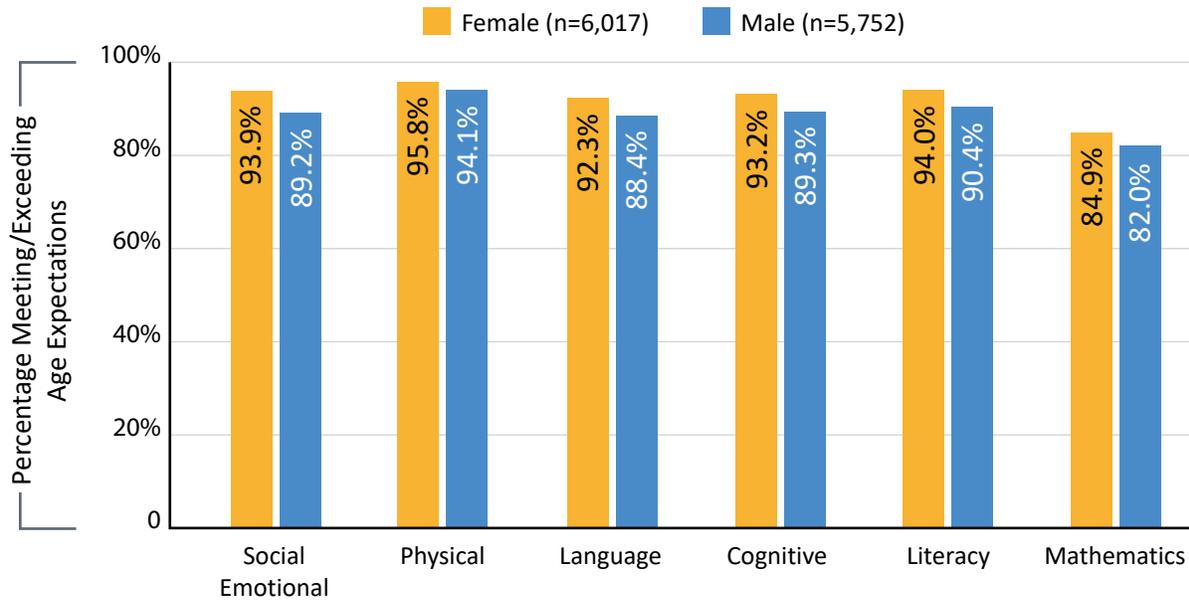
Figures 21-26 illustrate the results in each area across several key demographic groups: gender, children’s primary language, and race/ethnicity. Bar charts at the top represent the percentage of 4-year-olds meeting or exceeding age expectations by the end of the school year. Below each bar chart is a line graph of the average difference in scaled scores between fall and spring. These line graphs look at the average “difference score” which reflects growth in each disaggregated group. A higher difference score equals greater growth on average for the specified group. These growth scores provide greater context over the course of the school year. While no single cause can be attributed to these results, they do reveal trends of disparities across groups.



Results by Gender

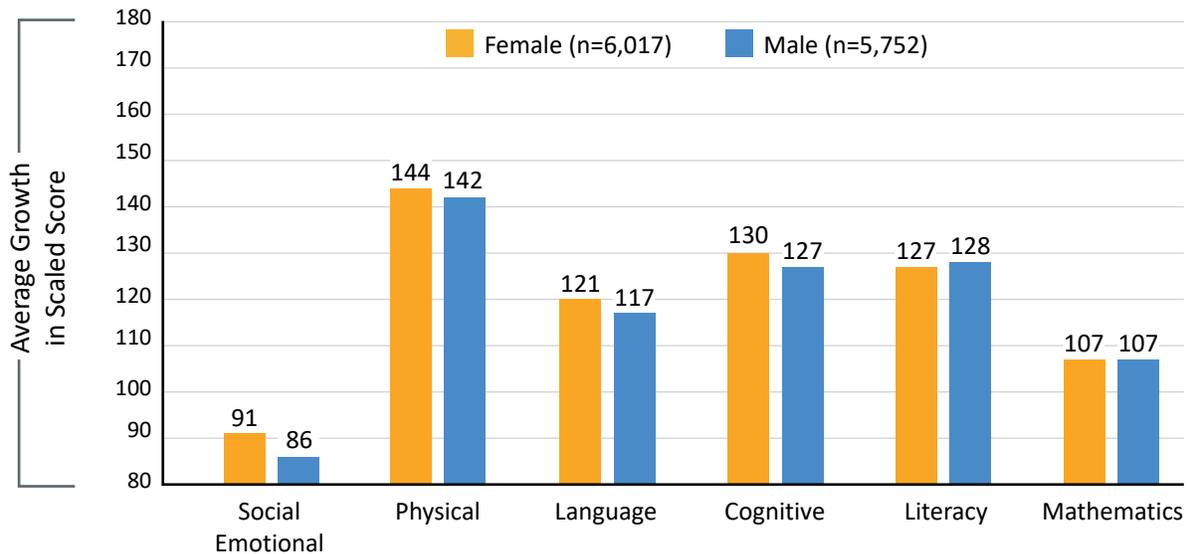
Figure 21 shows that a higher percentage of females met or exceeded age expectations in all areas compared to males. However, at least 75 percent of children met or exceeded age expectations by spring across area, regardless of gender. All differences between genders are statistically significant.

Figure 21: Percentage of 4-Year-Olds in CPP Meeting or Exceeding Age Expectations by Gender (Spring 2019)



While the average rate of growth between fall and spring across areas was fairly consistent across genders, there are some slight differences as seen in Figure 22. Females showed higher rates of growth that were statistically significant in the social-emotional, language, and cognitive areas.

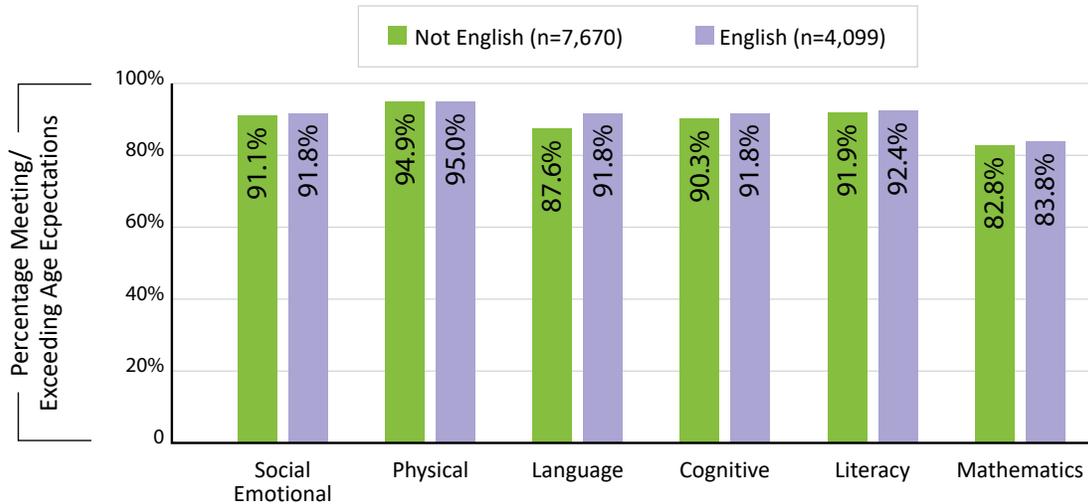
Figure 22: Average Growth in Scaled Scores between Fall 2018 and Spring 2019 by Gender



Results by Primary Language Spoken by Children

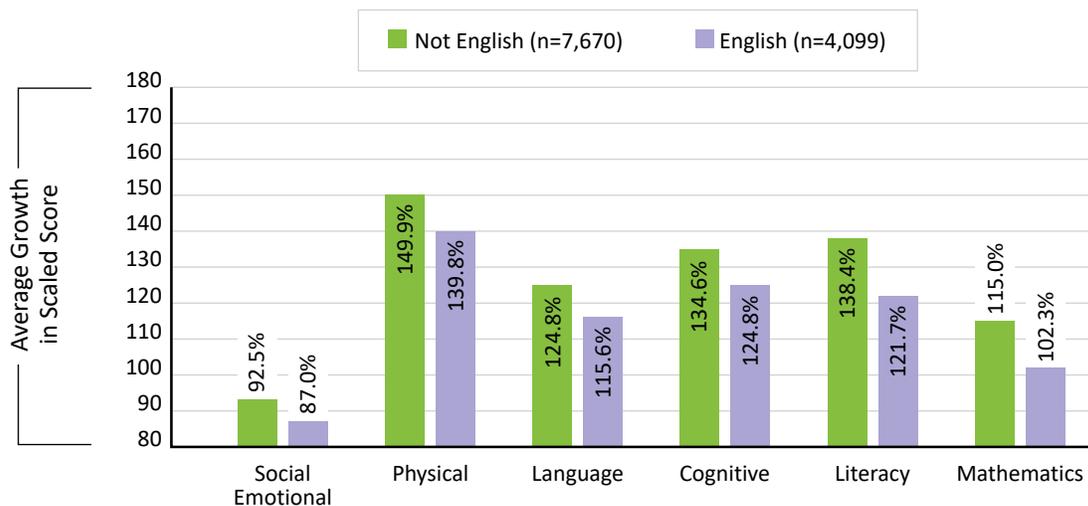
Statistically significant differences exist in the language and cognitive areas between children whose primary language is English compared to those whose primary language is not English as shown in Figure 23. However, a high majority (more than 80 percent) of all children met or exceeded age expectations in all areas regardless of their primary language.

Figure 23: Percentage of 4-Year-Olds in CPP Meeting or Exceeding Age Expectations by Primary Language (Spring 2019)



On average, children whose primary language is not English demonstrated higher rates of growth that were statistically significant across all areas compared to children whose primary language is English (Figure 24).

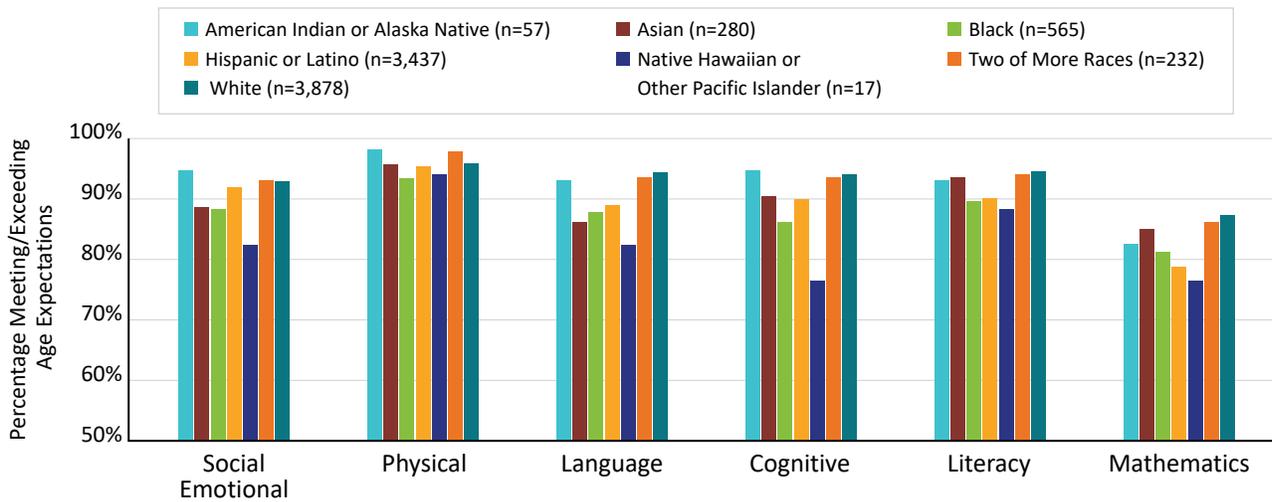
Figure 24: Average Growth in Scaled Scores between Fall 2018 and Spring 2019 by Primary Language



Results by Race/Ethnicity

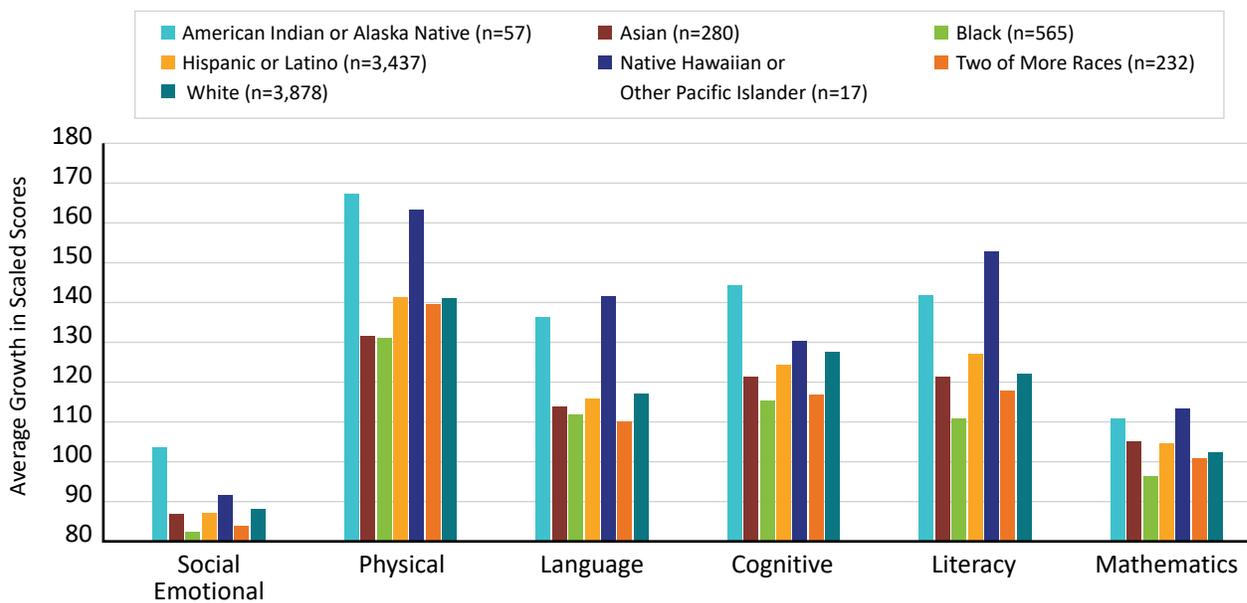
A strong majority of all children (more than 75 percent) met or exceeded age expectations across all areas regardless of race/ethnicity as illustrated in Figure 25. Statistically significant differences exist between some racial/ethnic groups in all areas, although no one group consistently outperformed others across all areas.¹⁴

Figure 25: Percentage of 4-Year-Olds in CPP Meeting or Exceeding Age Expectations by Race/Ethnicity (Spring 2019)



As shown in Figure 26, average rates of growth differed across race and ethnicity. Statistically significant differences between racial/ethnic groups were seen in all areas except language, with the largest differences between groups in literacy.

Figure 26: Average Growth in Scaled Scores between Fall 2018 and Spring 2019 by Race/Ethnicity



¹⁴ Race/ethnicity was not specified for some children, resulting in lower n-sizes in this analysis of race/ethnicity compared to other disaggregations.

SUMMARY OF ANNUAL OUTCOMES KEY FINDINGS

1

Significant disparities exist in terms of growth over the year and meeting age expectations across student groups based on gender, race/ethnicity, and children's primary language as early as preschool, even among children in CPP who by definition are all already at risk for school failure.

2

On average, female children served in CPP score higher than male children served in CPP at the end of the school year across all six major developmental and academic areas. Females also showed greater growth on average during the year in social-emotional, language, and cognitive areas.

3

On average at the end of the school year, CPP 4-year olds whose primary language is not English tend to score lower than those whose primary language is English in two areas (language and cognitive). However, both groups show similar results in four other areas (social-emotional, physical, literacy, and math). It should be noted that literacy and language are assessed in English, which is not necessarily every child's native language. However, children whose primary language is not English show greater average growth in every area, suggesting the language gap in the areas of language and cognitive development may be narrowing.

4

Statistically significant differences in growth between racial/ethnic groups were seen in all areas except language, with the largest differences between groups in literacy.

Long-Term Outcomes for Students Served by the Colorado Preschool Program

Longitudinal data for students who participated in CPP show positive long-term outcomes related to significant reading deficiencies, grade retention, Colorado Measures of Academic Success (CMAS) assessment, and on-time graduation.

KEY FINDINGS

1

Kindergarteners who had previously participated in CPP-funded preschool were less likely to be identified with a significant reading deficiency (SRD) than those who did not participate in CPP. Among children who participated in CPP, the odds of being identified with a SRD in kindergarten were 26 percent lower than children who did not participate, even when controlling for key demographic variables.

2

Students who participated in CPP are retained at a lower rate in grades K-3 than children who did not participate in CPP. Compared to at-risk peers who did not attend state-funded preschool, CPP graduates are less likely to be retained (i.e., held back in a grade) by about half in K-3 overall and as low as two-thirds the rate in first grade. This translates to lower costs to districts for children repeating a grade.

3

The percentage of CPP graduates who meet or exceed CMAS expectations is higher compared to at-risk peers in most subject areas.

4

Students who participated in CPP are more likely to graduate on time than children who did not participate in CPP. The odds of graduating on time with a high school diploma (within four years of entering ninth grade) were 12 percent higher for children who participated in CPP in the 2004-05 school year, even when controlling for key demographic variables.

READ Act Assessment Results

The Reading to Ensure Academic Development (READ) Act focuses on improving early literacy by providing intervention supports to K-3 students identified as having a significant reading deficiency (SRD). The READ Act promotes early identification of reading difficulties and effective intervention to quickly close reading gaps in order to help all Colorado students meet the goal of reading by third grade.

Figure 27 illustrates SRD rates in the 2017-18 school year among four consecutive cohorts of children in CPP from 2013-14 to 2016-17.¹⁵ SRD rates are also compared to grade-matched comparison groups of children who were at risk (eligible for free or reduced-price lunch in first grade) but did not have any history of state-funded preschool.¹⁶ Among CPP graduates, SRD rates in grades 1-3 are, on average, five percentage points lower compared to other at-risk children who had no history of state-funded preschool. SRD rates are similar across grades 1-3. These trends have remained consistent over time.

Figure 27: Percentage of Students with a Significant Reading Deficiency (2017-18)



In addition, children who were served in CPP in 2016-17 the year before kindergarten are 26 percent less likely to be identified with a significant reading deficiency at the end of kindergarten compared to children who were not served in CPP, even when controlling for gender, race/ethnicity, eligibility for free and reduced price lunch, disability, and language proficiency.

¹⁵ READ data from the 2018-19 school year were not available in time for development of this report; 2017-18 data were used instead. As a result, the most recent cohort of CPP graduates available for this longitudinal analysis was from 2016-17 as they would have been in kindergarten in 2017-18. For more information, see methodological notes and cohort definitions in the data appendix.

¹⁶ Cohorts vary across grades due to analysis of 2018 READ data only. Please see the longitudinal data appendix for cohort descriptions.



Grade Retention Results

Grade retention — that is, holding students back — is one of several tools in a school’s toolbox of interventions. Supporting children who repeat a grade increases the costs associated with funding public school. While high-quality preschool requires a significant investment, it generally costs less than retention. The data below suggest a return on investment in CPP.

Figure 28 shows the overall proportion of children from three different cohorts who were held back at any point in grades K-3 (i.e., cumulative retention rate). These figures show a comparison group of children with no history of state-funded preschool who were eligible for free or reduced-price lunch as a proxy for at-risk students who may have otherwise qualified for CPP.

Figure 28: Cumulative Retention Rates: Kindergarten through Third Grade

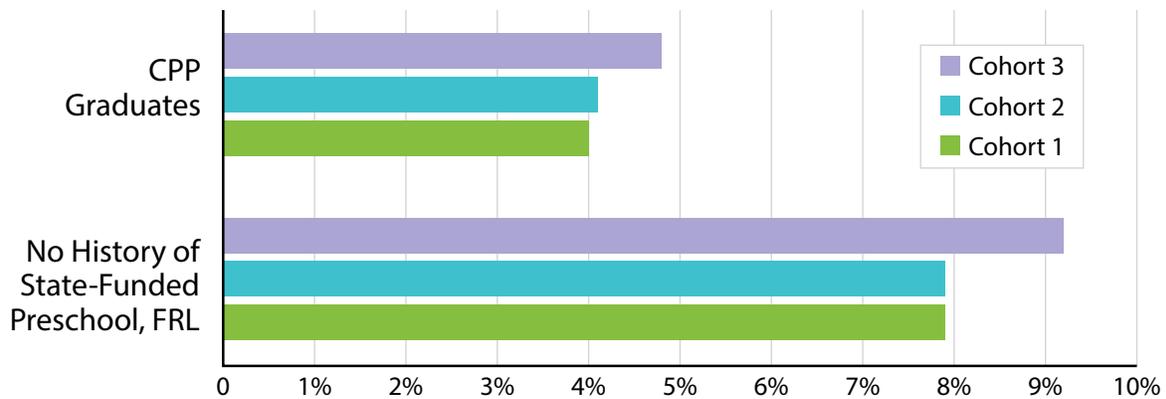
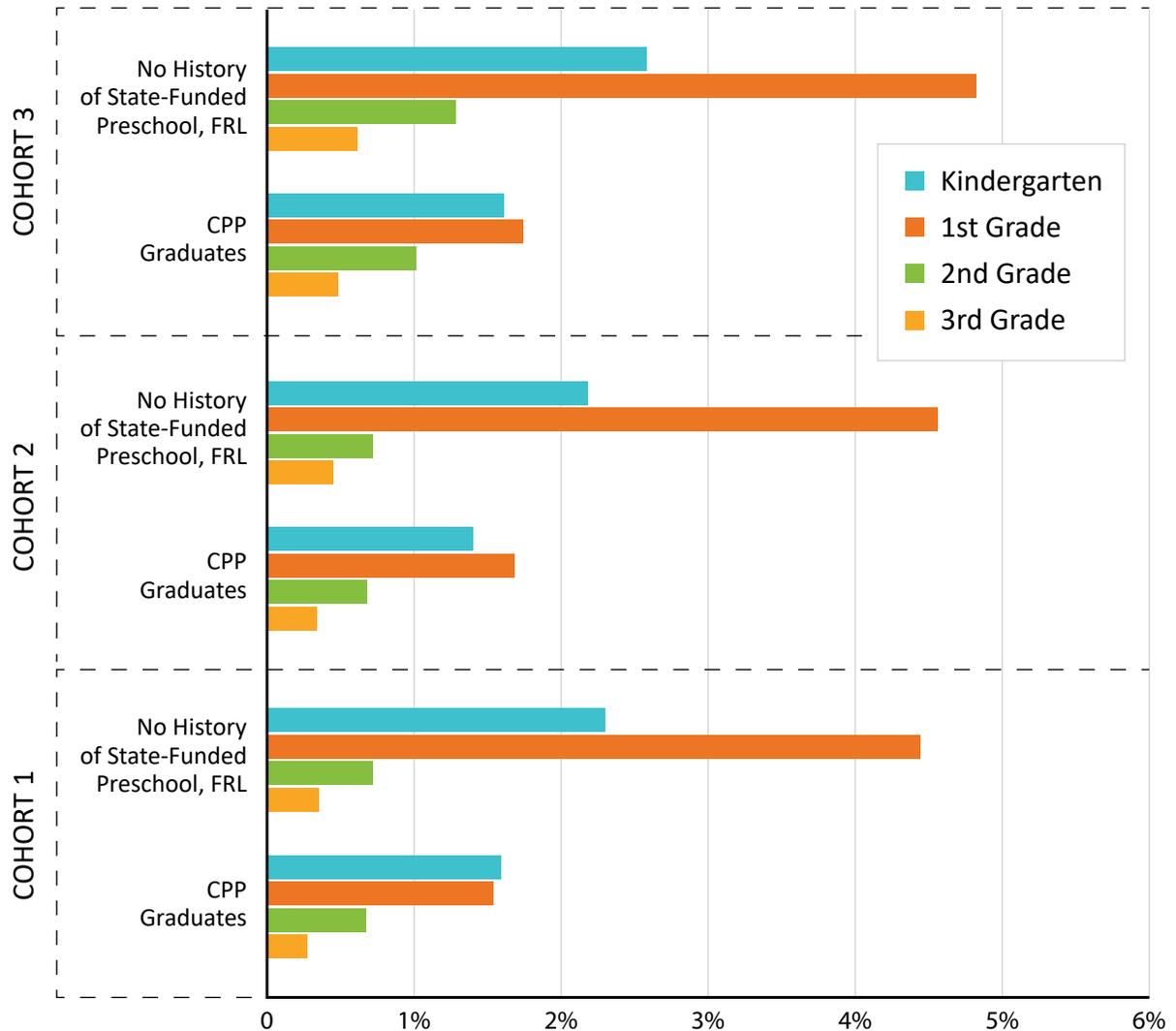


Figure 29 breaks retention data down further, showing retention rates in each grade (K-3).

Figure 29: Percentage of Students Who Were Retained by Grade

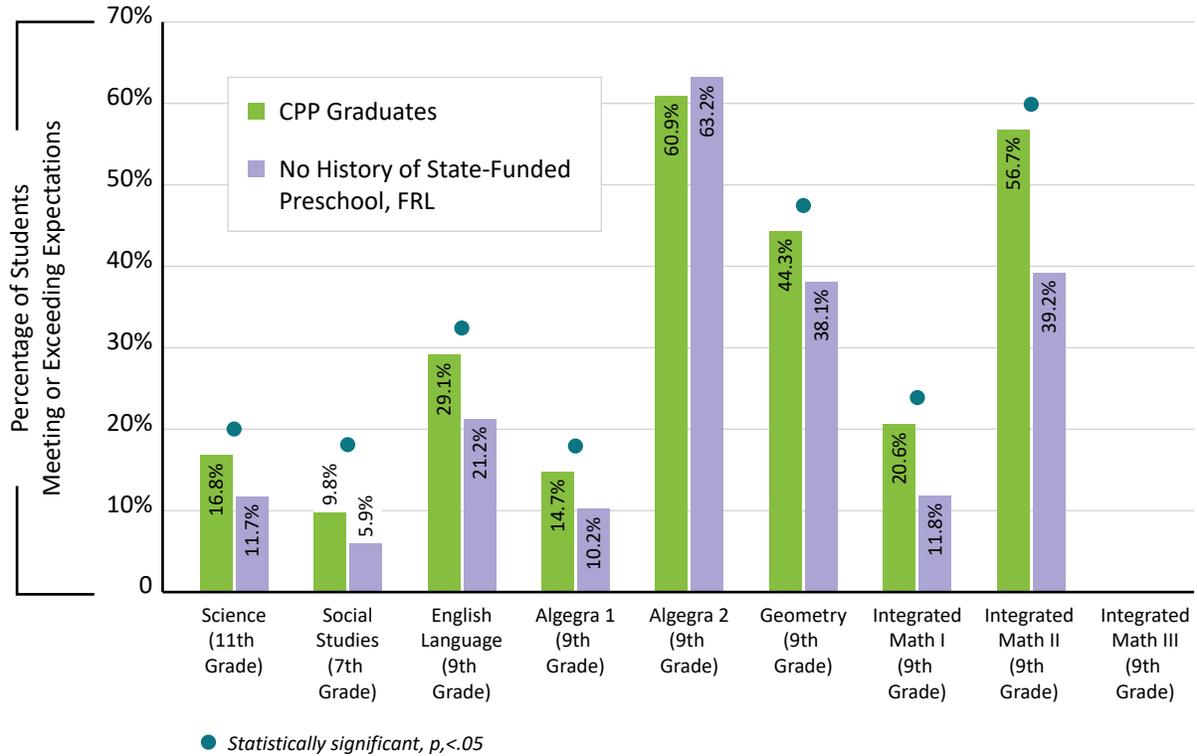


These outcomes illustrate that CPP is associated with a reduced need for retention by about half in K-3 overall and as much as two-thirds the rate in first grade, when compared to similar groups of at-risk children who did not attend state-funded preschool. Overall, retention rates are highest in first grade but lower for CPP graduates compared to at-risk children with no history of state-funded preschool. These trends have remained consistent over time.

Colorado Measures of Academic Success (CMAS) Results

Based on 2017 CMAS results, the percentage of CPP graduates who meet or exceed expectations in any one subject area is typically higher than the comparison group of at-risk peers with no history of state-funded preschool.¹⁷ The differences are statistically significant for all subject areas except for Algebra II.

Figure 30: 2017 CMAS Results



Methodological Notes and Limitations

CMAS data availability is limited. As of 2017, CMAS science and social studies had been administered for four years. CMAS English language arts and math had only been administered for three years. In addition, science and social studies are not assessed in every grade. Therefore, different cohorts were used depending on the subject area. Integrated Math III is not displayed due to low participation. Please see the longitudinal data appendix for more information.

¹⁷ CMAS data from later school years were not available in time for development of this report. For more information, see methodological notes and cohort definitions in the data appendix.

On-Time Graduation Results

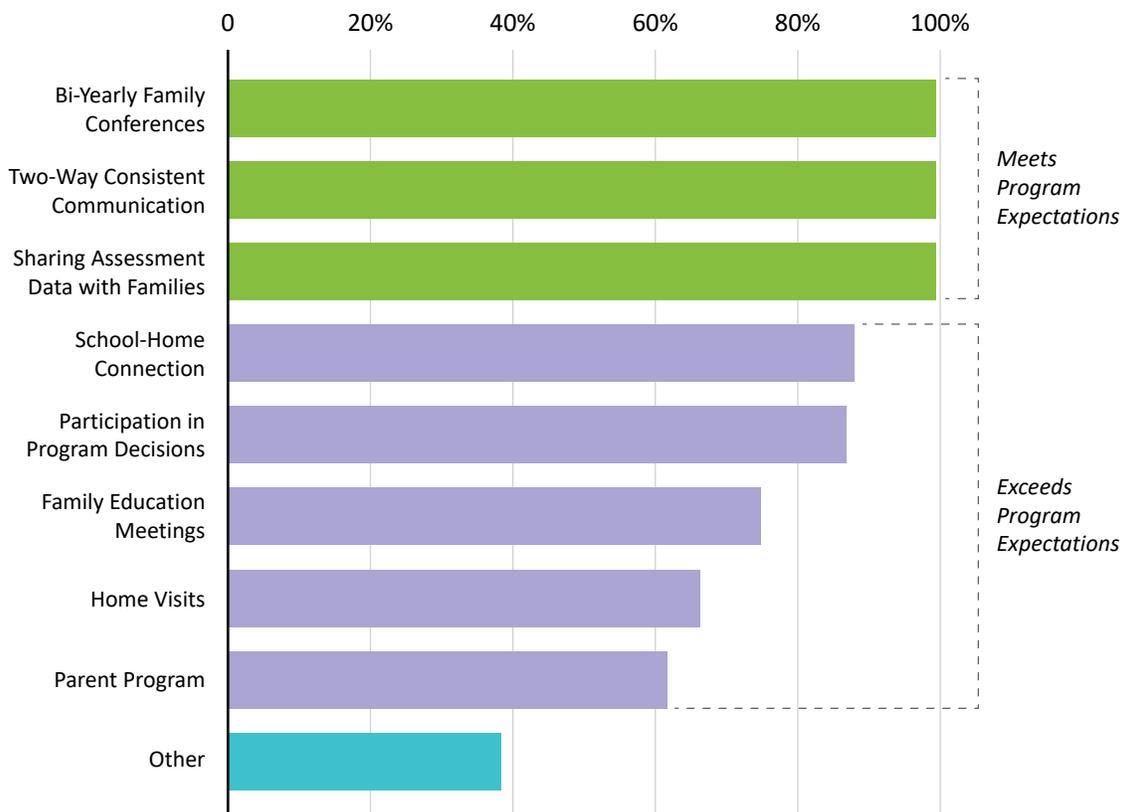
Participation in CPP is associated with long-term benefits as far out as high school graduation. Using a cohort of children who attended preschool in 2004-05, CDE analyzed their high school graduation results 13 years later in 2017-18 — the most recent year with graduation data available. Children served in CPP in the 2004-05 school year were 12 percent more likely to graduate on time with a high school diploma within four years of entering ninth grade compared to children who did not receive CPP funding. This result held true even when controlling for gender, race/ethnicity, eligibility for free and reduced price lunch, disability, and language proficiency.



The Vital Role of Family Engagement

An important goal of CPP is to start the involvement of families in their children’s school experience. In fact, CPP rules require that parents/guardians sign an agreement about their responsibilities to their children’s educational program.¹⁸ CPP strives to make families equal partners with schools by working together to improve children’s developmental and academic outcomes. Programs serving children in CPP are expected to actively engage families in preschool using strategies like family conferences and sharing assessment data with families (represented in green in Figure 31). Many districts report using high-impact family engagement strategies that meet or exceed CPP program expectations. While some districts used a blend of multiple strategies that met or exceeded expectations, 67 districts reported using all eight strategies explicitly identified by CDE.

Figure 31: Percentage of CPP-Participating School Districts Reporting Use of High-Impact Family Engagement Strategies



67 school districts (38 percent of districts participating in CPP) reported using all eight family engagement strategies that meet or exceed program expectations.

¹⁸ C.C.R § 2228-R 4.04 (3)

“The parent meet-up...was a great success. The parents seemed to really enjoy it. It was wonderful to see parents play with their children who were able to show their parents their favorite area to play or their favorite activity in their own preschool setting.”

—Liberty Preschool



Conclusion

Since the program's inception, CPP has grown significantly in terms of financing and enrollment. The sustained investment in CPP for over 30 years has created opportunities for hundreds of thousands of children to benefit from high-quality preschool programming. This benefit is apparent across multiple short- and long-term outcomes. As the legislature continues to invest in children early, CDE commits to ensuring an aligned educational system for young children from preschool through third grade.



DATA APPENDIX

This section includes supplemental notes, descriptive statistics, and cohort definitions for the READ Act, grade retention, and CMAS results.

READ Act: Methodological Notes

- Where noted, the phrase “At Risk, No History of State-Funded Preschool” refers to a grade-matched comparison group defined as children eligible for free or reduced price lunch in first grade the same expected year as the CPP cohort and with no history of publicly-funded preschool in Colorado, as denoted by the fall pupil counts. CDE does not track whether children had other preschool experiences besides state-funded preschool (i.e., CPP and preschool special education).
- READ data lag by one year to allow for evaluation of significant reading deficiencies in kindergarten since that cohort’s comparison group was grade-matched to children in first grade in 2018-2019 school year.
- Each cohort includes a small percentage of children who did not follow a normal grade progression because they were either held back or skipped a grade, and thus may have appeared in a higher or lower grade for the 2017-18 READ data collection.
- A small fraction of students not identified with significant reading deficiencies were English Learners who initially showed a significant reading deficiency on one of the interim assessments but had that designation refuted (determined locally).
- Calculations do not include children who were exempt from READ assessment, third-graders who took the CoAlt (Colorado’s alternate assessment for students with significant cognitive disabilities), and K-2 students who were eligible to take the CoAlt.
- READ data from the 2017-18 school year were used because 2018-19 READ data had not been finalized at the time data analysis was completed for this report. The 2017-18 school year was the sixth year of the READ data collection. As with any data collection, data quality improves over time. Therefore, please use caution when interpreting changes between years. CDE continually takes steps to improve data quality and ensure that data are increasingly reliable and valid.

READ ACT: COHORT DEFINITIONS

KINDERGARTEN

- CPP = CPP in 2016-17
- At Risk, No History of State-Funded Preschool = No history of state-funded preschool and eligible for free or reduced price lunch in first grade in 2018-19

FIRST GRADE

- CPP = CPP in 2015-16
- At Risk, No History of State-Funded Preschool = No history of state-funded preschool and eligible for free or reduced price lunch in first grade in 2017-18

SECOND GRADE

- CPP = CPP in 2014-15
- At Risk, No History of State-Funded Preschool = No history of state-funded preschool and eligible for free or reduced price lunch in first grade in 2016-17

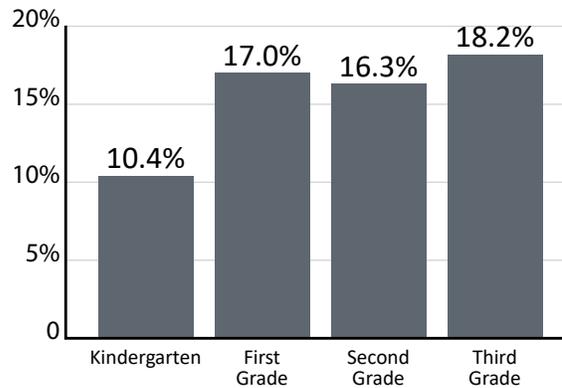
THIRD GRADE

- CPP = CPP in 2013-14
- At Risk, No History of State-Funded Preschool = No history of state-funded preschool and eligible for free or reduced price lunch in first grade in 2015-16

N Size

COHORT	CPP	COMPARISON GROUP
Kindergarten	18,574	12,262
First Grade	19,137	13,558
Second Grade	19,030	13,793
Thrid Grade	13,592	14,322

2018 Colorado Statewide Rates of Significant Reading Deficiency



GRADE RETENTION: COHORT DEFINITIONS

COHORT 1

- CPP = CPP in 2010-11, K in 2011-12
- At Risk, No History of State-Funded Preschool = No history of state-funded preschool and eligible for free or reduced price lunch in first grade in 2012-13

COHORT 2

- CPP = CPP in 2011-12, K in 2012-13
- At Risk, No History of State-Funded Preschool = No history of state-funded preschool and eligible for free or reduced price lunch in first grade in 2013-14

COHORT 3

- CPP = CPP in 2012-13, K in 2013-14
- At Risk, No History of State-Funded Preschool = No history of state-funded preschool and eligible for free or reduced price lunch in first grade in 2014-15

N Size

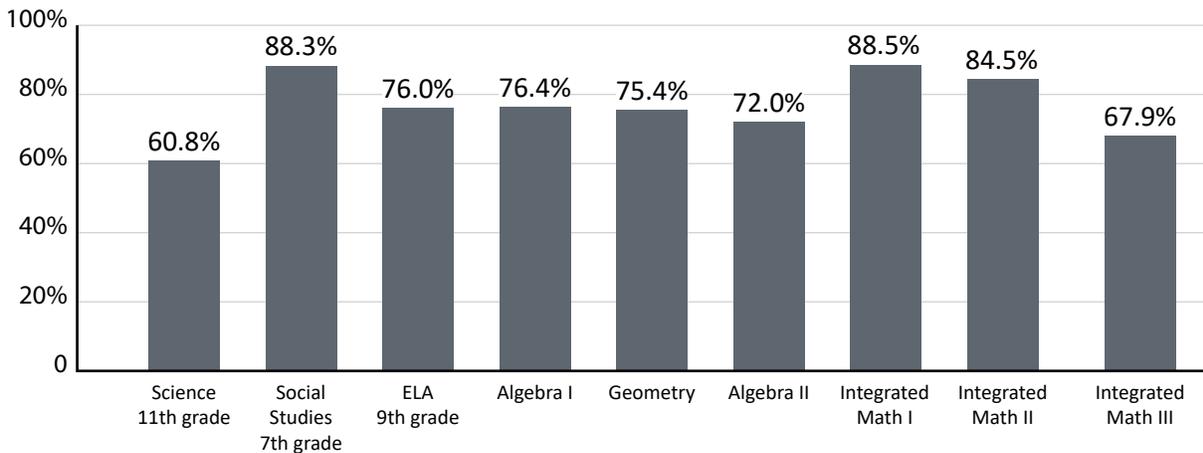
COHORT	CPP	COMPARISON GROUP
Cohort 1	15,435	17,833
Cohort 2	15,462	17,748
Cohort 3	15,549	16,856



CMAS: METHODOLOGICAL NOTES

- Where noted, the phrase “At Risk, No History of State-Funded Preschool” refers to a grade-matched comparison group defined as children eligible for free or reduced price lunch in first grade the same expected year as the CPP cohort and with no history of publicly-funded preschool in Colorado, as denoted by the fall pupil counts. CDE does not track whether children had other preschool experiences besides state-funded preschool (i.e., CPP and preschool special education).
- Each cohort includes a small percentage of children who did not follow a typical grade progression because they either attended preschool for multiple years, were held back, or skipped a grade. The effect on the 2017 grade distribution varies depending on the CMAS subject.
- English language arts is assessed in grades 3-9, where about 28 percent of the CPP cohort and 6 percent of the comparison cohort were assessed in a grade lower than 9th in 2017. In contrast, science and social studies are not assessed every year. 99.8 percent and 99.3 percent of children reported in science and social studies were in 11th grade and 7th grade, respectively. However, some children from the original cohorts were in a grade higher or lower than 11th grade by 2017, meaning they would not be assessed at all in science or social studies until that year. Until more years pass, these children cannot be reported in science and social studies.
- Algebra I and II, Geometry, and Integrated Math I, II, and III were administered mostly in 9th grade with the exception of a few children in 7th and 8th grade who had the flexibility to take high school math exams.
- Social Studies was administered on a sampling basis with approximately one-third of schools participating.
- 2017 statewide participation rates varied widely by subject area and grade:

2107 Statewide CMAS Participation Rates



CMAS: COHORT DEFINITIONS

**SCIENCE
(MAJORITY IN ELEVENTH GRADE)**

- CPP = CPP in 2004-05
- No History of State-Funded Preschool = No history of state-funded preschool, eligible for free or reduced price lunch in first grade in 2006-07

**SOCIAL STUDIES
(MAJORITY IN SEVENTH GRADE)**

- CPP = CPP in 2008-09
- No History of State-Funded Preschool = No history of state-funded preschool, eligible for free or reduced price lunch in first grade in 2010-11

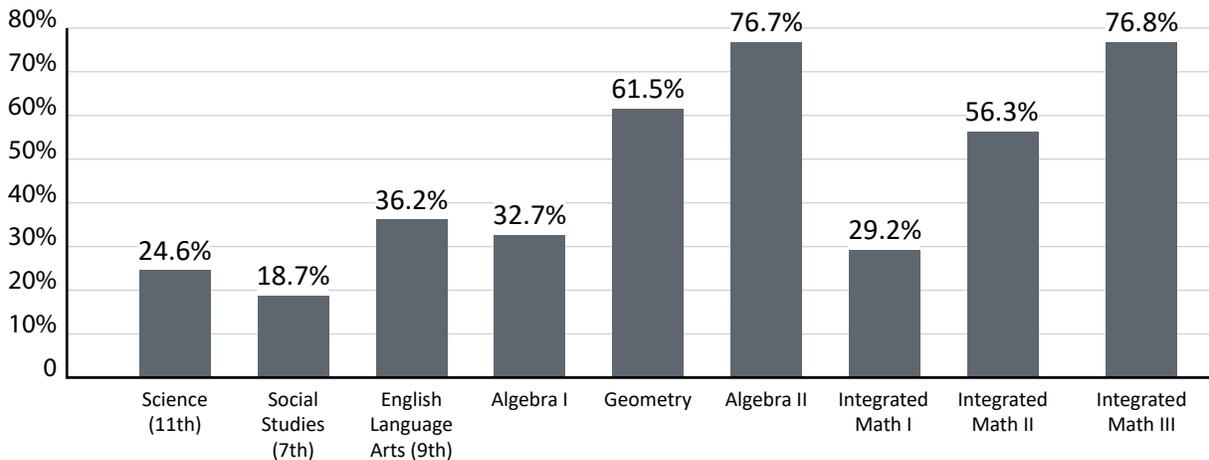
**ENGLISH LANGUAGE ARTS
(MAJORITY IN NINTH GRADE)**

- CPP = CPP in 2006-07
- No History of State-Funded Preschool = No history of state-funded preschool, eligible for free or reduced price lunch in first grade in 2008-09

**MATHEMATICS
(ALL TEST SUBJECTS - MAJORITY IN NINTH GRADE)**

- CPP = CPP in 2006-07
- No History of State-Funded Preschool = No history of state-funded preschool, eligible for free or reduced price lunch in first grade in 2008-09

2017 Statewide Average - Percentage Met of Exceeded Expectations



CMAS: COHORT DEFINITIONS CONTINUED

SUBJECT	CPP	COMPARISON GROUP
Science (Majority 11th)	3,408	7,667
Social Studies (Majority 7th)	3,078	3,692
English Language Arts (Majority 9th)	8,001	10,554
Algebra I (Majority 9th)	3,874	6,294
Geometry (Majority 9th)	732	800
Algebra II (Majority 9th)	92	106
Int. Math I (Majority 9th)	1,107	2,395
Int. Math II (Majority 9th)	157	265
Int. Math III (Majority 9th)	N<16	N<16



SRD AND ON-TIME GRADUATION LONGITUDINAL MODELS: METHODOLOGICAL NOTES

The longitudinal models which evaluated the identification of a significant reading deficiency at the end of kindergarten and on-time graduation used a statistical technique known as logistic regression. Logistic regression helps illuminate the relationship between several independent variables—in this case, race/ethnicity, disability, CPP participation, etc.—on a particular dependent variable of interest—in this case, the identification of a significant reading deficiency at the end of kindergarten or on-time graduation. Logistic regression is a type of inferential statistics, which have a distinct advantage over descriptive statistics, such as overall percentage of females in CPP, in that the results can be generalized to the entire state and across multiple years, assuming similar characteristics over time. The regression model also allows for understanding the unique impact of CPP even after controlling for other factors, such as free or reduced lunch eligibility or disability, that are also likely to affect the outcome.¹⁹

Even with the advantages that inferential modeling provides, some limitations still exist:

- Due to the nature of longitudinal studies, an older cohort of CPP-funded children had to be used to look at recent graduation rates. Program and cohort characteristics may have shifted over time. More recent cohorts can be used over time.
- The studies did not consider children who had other prior preschool experiences not related to the funding streams of CPP or preschool special education, such as tuition-based child care. Therefore, these models cannot control for other preschool experiences or funding sources.
- The models did not control for other demographic factors, such as maternal education and family income, which may influence outcomes but for which such data are not collected by CDE.
- These studies did not investigate selection bias. Selection bias arises when there is potential for initial differences between children who participate in preschool and those who do not, such as when certain families self-select not to participate in CPP despite having multiple risk factors. However, state policy prevents the ability to randomly assign children to CPP in a randomized controlled trial design. State policy also prevents the comparison of a single assessment metric at both preschool and kindergarten to set up a regression discontinuity design, which might eliminate the threat of selection bias. It should be noted that at least one other study concluded that selection bias underestimated the effects of preschool participation on kindergarten outcomes.¹⁹
- Descriptive statistics for these models are available upon request.

¹⁹ Jung, K. and Barnett, S. (2013). Longitudinal Effects of the Arkansas Better Chance Program: Findings from First Grade through Fourth Grade. Retrieved from <http://nieer.org/wp-content/uploads/2016/08/Arkansas20Longitudinal20Report20May2013n.pdf>

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