DENVER PRESCHOOL PROGRAM

OPERATIONS EVALUATION
2018-2019 Program Year

Evaluation Report 1: Family Access

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Introduction

The Denver Preschool Program (DPP) supports increased access to quality preschool in Denver. Approved by voters in 2006, DPP provides tuition credits on a sliding scale to all families in the City of County of Denver who have a child in their last year of preschool before kindergarten. DPP also supports participating preschools by providing quality improvement (QI) resources and is a national advocate and example for expanding access to early childhood education. DPP is funded by a City and County of Denver sales tax, first approved by voters in 2006 (0.12 percent), and reauthorized by voters in 2014 (with an increase to 0.15 percent).

The Butler Institute for Families at the University of Denver (Butler) partners with The Implementation Group to evaluate DPP's program operations. Overall, the operations evaluation assesses the extent to which DPP's services result in children's *access* to *quality* preschool. Specifically, the evaluation examines:

⟩ The relationship between DPP tuition credits and family access to quality preschool
⟩ The implementation of DPP's QI resources for preschool programs
⟩ The relationship between DPP's QI resources on program quality
⟩ The relationship between DPP's QI resources and teacher practices, quality ratings and well-being

Evaluation results for the 2018-19 program year are provided in three reports. This is the first report, which focuses on DPP tuition credits and the extent to which they support families' access to quality preschool. Report 2 presents results related to DPP's QI supports, and Report 3 presents the results of a DPP workforce study.

Methods

To examine the extent to which DPP tuition credits support families' access to quality preschool, we utilized multiple methods to collect primary data from DPP families. We also analyzed secondary data from DPP administrative records. Data sources and data collection procedures are described below.

Surveys

The evaluation team administered surveys from February-April 2019 to examine parents' experiences with DPP. Surveys were distributed to a random sample of 711 DPP families with a 4-year-old child enrolled at a DPP preschool, which was stratified to represent the overall population of DPP families by tuition tier (related to household income and family size)[1], school

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[1] For information about DPP tuition tiers, see Table 1 on page 6.

type (community or DPS), and region of the city.[1] We mailed paper-and-pencil surveys to families and sent online surveys if an email address was available. Email reminders were sent approximately weekly, and reminder postcards were also sent mid-way through the data collection process. Almost one-half (47 percent) of those families returned the survey ($n = 333$).

Interviews

In spring 2019, evaluators conducted follow-up interviews with a subsample of family survey respondents to gather in-depth information about their views of DPP's services. Interviews with DPP families included parents whose child attended community ($n = 9$) or DPS preschools ($n = 6$) and included representation of families whose children were identified as Black or African American, Hispanic or Latinx, white, and American Indian or Alaskan Native.

Secondary Data

Records related to preschools and students who participated in DPP during the 2018-2019 program year (September 2018 through August 2019) were obtained from DPP's enrollment and eligibility contractor, MetrixIQ. We also used datasets from the 2016-2017 and 2017-2018 program years to examine the delivery of tuition credits and families' perceptions over time. Colorado Shines ratings were obtained from DPP administrative records.

Data Analysis

Descriptive statistics, including counts, percentages, and means, were used to analyze quantitative data. In addition, multiple linear and logistic regression models were used to examine the effects of multiple predictors on key outcomes related to preschool access and quality. Qualitative data from interviews were transcribed and analyzed using a two-step process. Initially, analysts coded the data with broad thematic categories. This resulted in a list of themes and excerpts from interviews that corresponded with each theme. Then, the analysts proceeded with a second, more fine-grained analysis using sub-themes.

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[1] The sample from southwest Denver and income tier 1 was doubled, with an additional 61 families from these groups included in order to aid in the representativeness of the sample with respect to the overall population of DPP families.

Results

Results are presented in three sections, focusing on 1) families' knowledge of DPP and tuition credits, 2) tuition credit delivery, and 3) the impact of DPP tuition credits.

Knowledge of DPP and Tuition Credits

To understand how families perceive the support they receive from DPP, this section examines families' knowledge of DPP tuition credits.

As in previous years, most DPP families who took the survey in 2018-2019 reported knowing *some* or *a lot* about DPP (71 percent), while 29 percent knew *very little* or *nothing at all*.

The most common ways families first heard about DPP were from Denver Public Schools (DPS), preschool staff, or a friend (as shown in the box, right). Among DPS families, 42 percent reported learning about DPP from DPS (up slightly from 35 percent last year).

Top five ways families first heard about DPP (*n* = 228):
- DPS (28%)
- Preschool staff (19%)
- A friend (13%)
- Other child participated in DPP (10%)
- DPP staff (8%)

*The remaining 22% selected other responses or did not know.

When did parents find out about DPP?*
- More than six months before preschool started – 62%
- Less than six months before preschool started – 19%
- After preschool started – 10%

*~10% did not remember

We asked those who reported at least *some* knowledge of DPP (*n* = 231) follow-up questions about DPP. Most families found out about DPP more than six months before the start of preschool (62 percent; see box, left).

With respect to DPP's tuition credits (*How much do you know about the DPP tuition credit?*), most parents had at least *some* knowledge (64 percent), while 36 percent knew *very little* or *nothing at all*. About one-third of families (35 percent) with at least *some* knowledge of DPP in general reported knowing *nothing at all* or *very little* about DPP's tuition credits.

In interviews, families expressed varying levels of knowledge about DPP. Some seemed to have an understanding of DPP's tuition credits and DPP's mission to increase access to preschool (see box right).

Others defined DPP in terms of its benefits for children: *"Just giving them that knowledge of what school's gonna be about ... getting them to learn different things and experience different things about what goes on in school."* However, a few families were not sure what DPP did. As one person said, *"I don't actually know. I assume they oversee preschools within the Denver public school system, but I do not know."*

When asked whether they received monthly information about their DPP tuition credit, many families were unsure; as one parent said, *"I don't believe so. Unless I'm getting an email…I don't know for sure."* Some were aware of an initial notification, but were not notified monthly. For example, one person explained, *"So they let me know at the beginning of the school year how much I got approved and then just apply that for my tuition."* A few families received a monthly notification on their billing statement from the preschool, *"Yeah. It comes in the statement that [the preschool] sends out, the monthly tuition statement. It'll say in a list what the DPP amount is, and minus that from my tuition."*

To increase and improve families' knowledge of DPP, suggestions from interviewees included:
- **Postal mail:** *"I would say maybe send out fliers and some notification that it's there for families and children."*
- **Social media:** *"I would think social media would be good in order to spread the word in different ways."*
- **Communication from schools:** "*I would think, definitely, the first avenue would be through the existing schools and making sure that when children are three, that the school is communicating to those families that they then have this opportunity to enroll in this program when they're four."*
- **Information sharing across systems** *"I would definitely think maybe doing some kind of advertisement, maybe involved with doctor offices. I think that would help, with them going for the yearly [check up] on a certain age ... when they turn three or something. That they are able to get some kind of flyers, pamphlets when it comes to how to enroll for preschool."*

What Predicts Awareness of DPP Tuition Credits?

The evaluation results presented above demonstrate that some DPP families lack awareness of DPP tuition credits. Thus, it is important to determine whether there are disparities between groups of families in terms of their familiarity with DPP.

We analyzed pooled survey data from the 2016-17, 2017-18, and 2018-19 program years to examine if the following factors predict whether families know they receive DPP tuition credits: preschool type, tuition tier (see table, right), child's race/ethnicity, home language, region of the city in which the family lives, and program year.

Table 1. DPP income tiers

Income Tier	Percentage of FPL	2017-2018 Monthly Tuition Credit*
1	< 100%	$617
2	100% - 185%	$555
3	185%-285%	$494
4	285%-300%	$432
5	> 300%	$123
6	Income Opt Out	$62

*At a Level 4-rated preschool; full day attendance

Results show that families whose child attended a community preschool were nine times more likely to know they received a tuition credit (vs. DPS families). [1] Thus, while controlling for several child and family-level characteristics (e.g., race/ethnicity, home language, region of the city), it appears that DPS families are much less likely to know they receive DPP tuition credits. This could be because DPP tuition credits are not included on DPS families' monthly invoices.

Community preschool families were **9 times** more likely to know they received a tuition credit (vs. DPS families).

After controlling for tuition tier, race/ethnicity, home language, region, and program year.

Tuition Credit Delivery

This section explores how parents experience DPP tuition credits, both in terms of the logistics of applying for tuition credits, as well as the amount of tuition credits they receive. In addition, we examine whether families' perceptions vary based on child, family, and program characteristics.

Application Process

Overall, families found the application process *somewhat* to *very easy* ($M = 3.5$), on a scale of 1 to 4, with 1 being *very hard* and 4 being *very easy.* The most challenging part of the application process was gathering records (e.g., child's proof of age, proof of income, and proof of address) – 14 percent of parents rated this as *somewhat* or *very hard*. Fewer than five parents rated gathering records as *very hard*, and they were spread across income tiers 1, 4, and 6. Among those who rated gathering records as *somewhat hard* ($n = 41$), most (21 percent) were in tier 5. This illustrates that some families across income tiers experience difficulty in obtaining records.

DPS families rated filling out the DPP application as more difficult than did community families,

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[1] Model chi-square: $\chi (10) = 164.04$, $p < .001$; odds ratio (OR) for community preschool = 9.31

a statistically significant difference ($M = 3.5$ and $M = 3.7$, respectively).[1] However, it is unclear whether DPS families were referring to the DPS application or the DPP application, given that starting with the 2018-19 program year, they were combined in DPS' online application. All other ratings of the DPP application process were similar across parents from community and DPS preschools.

Many parents submitted their application online (see box, right). A quarter of respondents ($n = 83$) submitted their application through their child's preschool.

Families received help with the application process from several sources and rated the help they received favorably. The most highly rated source of support with the application was DPP, with a mean score of 3.5 on a scale of *not at all helpful* = 1 to *very helpful* = 4, followed by DPS ($M = 3.4$), non-DPS preschools ($M = 3.3$), friends ($M = 3.2$), and family members ($M = 3.1$).

Of families interviewed, most found the application process to be manageable and did not have much difficulty applying. One person said, *"Oh, it wasn't hard at all. All you had to do is just fill the application out and send it in, and they'll notify you otherwise if you got in or not."* Another interviewee described the process as, *"fairly easy. If you have the ability to work a computer and kind of know what you're looking for online, then for me it was simple enough."*

Income Opt-Out. During the 2018-19 program year, 476 parents (10 percent of DPP families) opted out of providing their income on the DPP application, resulting in their assignment to income tier 6. All other things being equal, families who "opt out" of providing income information receive the smallest tuition credits.

In interviews, many parents seemed fairly comfortable providing income information on the DPP application. One person said, *"It didn't feel like invasive or anything because to me, you're applying for assistance for something, and it's going to be based off of your income. So, it only makes sense that you'd have to provide it."* By contrast, a parent who found reporting income information intrusive explained, "*At times I had actually lost jobs, or was laid off during that time, so a lot of times I was filling out income affidavits because I didn't have any income for months. And then I felt it was a little intrusive.*"

However, similar to the survey results reported above, the main difficulty mentioned in interviews was providing documentation of income. One parent stated: *"It was hard to have documentation. Also, it's not told that you could really fill out an income affidavit or supplied that form even if you didn't have proof ... But a lot of times I was not able to find [the income affidavit] online, or the appropriate one. Or when I did find it online, who do I give it to?"*

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[1] $t(326.86) = -2.844$, $p < .05$

What factors predict whether families opt out of reporting income in the DPP application?
To understand the characteristics of families who opted out of reporting their income on the DPP application, we analyzed pooled administrative data from the 2016-17, 2017-18, and 2018-19 program years. Predictors included in the logistic regression model were: preschool type, enrollment type (part, full, or extended day), child's race/ethnicity, home language, region in which the family lives, and program year.

Families *more likely* to opt out:
- Speak English at home
- Have a child enrolled in preschool part-time
- Were DPP recipients in 2017-18 or 2018-19

Families *less likely* to opt out
- Identified as Hispanic or another race/ethnicity (vs. white)
- Live in southwest Denver
- Attend a community site

Together, these factors significantly predicted families' odds of opting out of reporting their income.[1] Families who spoke English at home were four times *more likely* to opt out (vs. those who spoke a language other than English at home). Families with a child enrolled in preschool part-time were 1.6 times more likely to opt out (vs. full or extended day enrollment). In addition, likelihood of families opting out has increased over time, with families served by DPP in 2018-19 having the highest odds of opting out.

By contrast, families identified as Hispanic or another race/ethnicity were significantly *less likely* to opt out (vs. white families), as were families who live in southwest Denver (vs. southeast Denver), and/or those who attend community sites (vs. DPS).

Overall, these results suggest that income opt-out rates are increasing over time, mainly by English-speaking families who have a child enrolled in preschool part-time.

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[1] Model chi-square: $\chi (10) = 1151.29$, $p < .001$; community site (OR = .70), English home language (OR = 3.70), other race/ethnicity (OR = .25), Hispanic ethnicity (OR = .17), Southwest region (OR = .19), 17-18 (OR = 1.38), 18-19 (OR = 1.83), part-time enrollment (OR = 1.63)

Views of DPP Tuition Credit Amounts

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Tuition Credit Amounts

Most DPP parents did not need a larger tuition credit to enroll in their preschool of choice or desired amount of time.

Those who needed a larger tuition credit tended to be at the lower and upper ends of the tuition credit scale.

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We asked parents who knew they received a DPP tuition credit ($n = 215$) whether the amount of the tuition credit met their needs in terms of enrolling their child in the preschool of their choice and for their desired amount of time.

Generally, it does not appear that families needed a larger tuition credit to enroll in their preschool of choice. Most (76 percent) would *not* have sent their child to a different preschool if their tuition credit had been larger, while 9 percent would have chosen a different school, and 15 percent said it depended on the amount of the tuition credit. Of those who may have chosen a different school ($n = 52$), many were in DPP tuition tier 1 (31 percent) or tier 5 (23 percent).

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Similarly, many parents (83 percent) would *not* have sent their child to preschool for more hours if the DPP tuition credit were larger, while 11 percent would have, and 7 percent said it depended on the amount.

Nearly three-quarters of DPP parents (71 percent) would have used a DPP tuition credit to support their child's 3-year-old preschool year (see box, below), if it had been available.

Do families need a tuition credit for their child's 3-year-old preschool year?

If DPP tuition credits were available for 3-year-olds…

- **28%** of parents would have enrolled their child in preschool as a 3-year-old
- **43%** had their child in preschool as a 3-year-old but *could have used* tuition help
- **16%** had their child in preschool as a 3-year-old and *did not* n*eed* tuition help
- **13%** still would not have sent their child to preschool as a 3-year-old

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Tuition Credit Amounts and Months Received

Each family's tuition credit amount is calculated based upon the tuition credit tier (determined by household income and family size), the quality rating of the preschool, and the hours the child attends preschool. For the 2018-19 school year, families received an average total of $3,729, accounting for the DPS cap.[1] Community preschool families received an average total of $4,064, while DPS families received an adjusted average of $3,105.

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[1] To promote parity between Denver Public Schools (DPS) and community preschools, DPP established a cap on tuition assistance available to DPS families, which was $8.69 million during the 2018-2019 school year.

What factors predict annual tuition credit amounts that families receive? To understand which groups of families tended to receive the largest tuition credits, we analyzed pooled administrative data from the 2016-17, 2017-18, and 2018-19 program years. Predictors included in the linear regression model were: preschool type, child's race/ethnicity, home language, region, and program year. Figure 1 on the next page shows significant predictors of tuition credit amounts, with the dollar amount associated with each predictor, controlling for the various school, family, and child factors described above.[1]

Identifying as Hispanic or another race/ethnicity (vs. white) was a significant predictor of receiving a larger tuition credit amount. Controlling for the other predictors, Hispanic families and those identified as another race or ethnicity received about $1,500 more in tuition credits than did white families. This is likely because much larger proportions of families of color are in tier 1 compared with white families (47 percent versus 12 percent, respectively) and therefore are eligible to receive a larger tuition credit.[2]

> **Top 3 predictors of tuition credit amounts**
> _____
> 1) Hispanic ethnicity (vs. white)
> 2) Other race/ethnicity (vs. white)
> 3) 2018-19 DPP recipient

DPP program year also predicted higher tuition credit amounts; compared to 2016-17, families served in 2017-18 received larger credits, and in turn, families served during 2018-19 received larger tuition credits than those served in 2017-18. This is to be expected, given that DPP tuition credit amounts have increased in recent years.
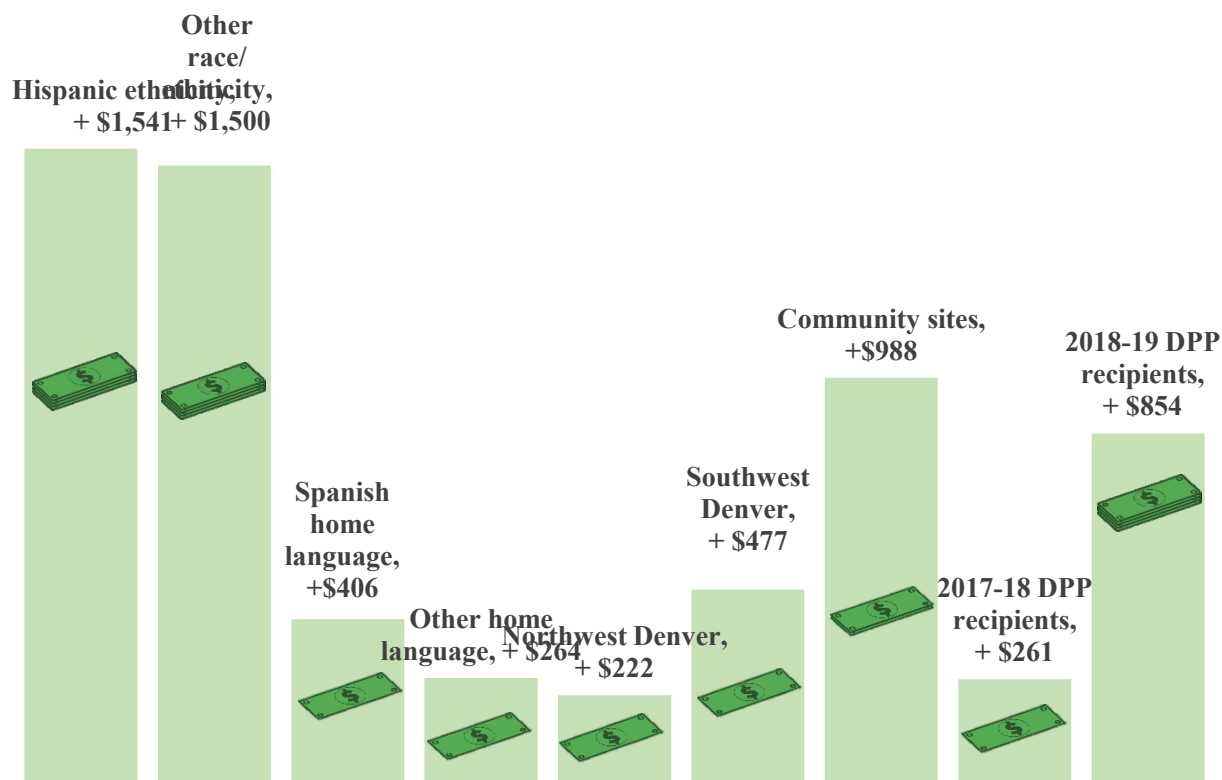
These results indicate families from traditionally underserved communities (e.g., families of color, those who live in southwest Denver) are receiving the most tuition support from DPP.

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[1] $f(10) = 345.93$, $p < .001$, $R^2 = .23$.
[2] $\chi 2(1) = 1683.18$, $p < .001$.

Figure 1. Significant predictors of annual tuition credit amounts (adjusted for the DPS cap)

Impacts of Tuition Credits

Access

DPP supports preschool access in multiple ways. First, DPP tuition credits may make it possible for parents to enroll in their preschool of choice and/or for their desired number of hours – or simply allow them to send their child to preschool at all. DPP also aims to help Denver families access *high-quality* preschool. In this section, we explore these aspects of preschool access.

To provide context for evaluation findings related to DPP's impact on families' preschool choices, **Error! Reference source not found.** shows various factors that families rated as *very important* when selecting a preschool.
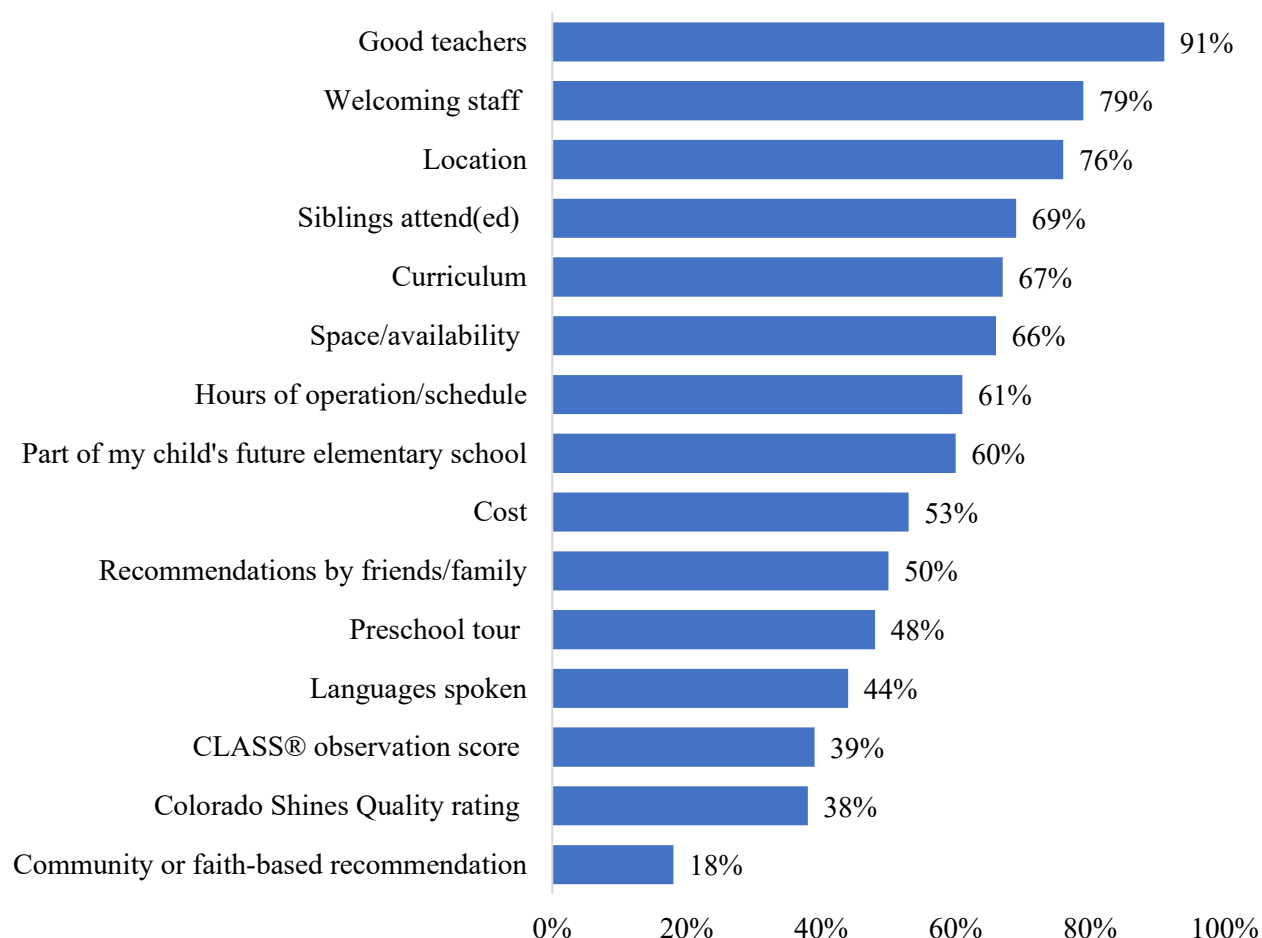
Choosing a Preschool

Interviewer: *How did your family decide on a preschool?*

DPP Parent: *Our main criteria were proximity to our house and work. And then we did tour the preschools, so we were looking for something that was more play-based than sort of getting into serious academics. I mean, they all do academics, but more play-based.*

Results suggest that the preschool workforce is critical to many parents' decisions, with good teachers and welcoming staff comprising the top two reasons. About 60-75 percent of families reported that practical issues such as location, hours, and space were very important, as were the preschool's curriculum and previous attendance by a sibling.

Figure 2. Factors influencing preschool choice that families rated as *very important* (*n* = 331)

Factor	Percent
Good teachers	91%
Welcoming staff	79%
Location	76%
Siblings attend(ed)	69%
Curriculum	67%
Space/availability	66%
Hours of operation/schedule	61%
Part of my child's future elementary school	60%
Cost	53%
Recommendations by friends/family	50%
Preschool tour	48%
Languages spoken	44%
CLASS® observation score	39%
Colorado Shines Quality rating	38%
Community or faith-based recommendation	18%

Access to family's preschool of choice. This year, 84 percent of families were able to send their child to their preferred preschool (compared with 81 percent in 2017-19 and 89 percent in 2016-17).

> Four out of five DPP parents sent their child to their school of choice in 2018-2019.

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Of families who did not enroll in their first-choice preschool (*n* = 52), most reported that there were no spaces left (62 percent), the location did not work (10 percent), and/or the schedule did not work (8 percent). Twenty percent of families cited other reasons for not sending their child to their first-choice preschool including: being waitlisted, family relocation, convenience, and specialized needs of child.

In terms of DPP's impact on preschool choice, 43 percent of survey respondents rated the tuition credits as *important* or *very important*, while 22 percent felt it was *somewhat important*, and 35 percent indicated it was *not important at all*.[1] Most families who rated tuition credits as *important* or *very important* were in tuition tiers 1 or 2 (61 percent).

> **Preschool availability:**
>
> *"There need to be more preschool slots. It's terrible…there was a major shortage of preschool slots at the school where my daughter and my son attend. We were very fortunate to get a spot. There were a number of other families with siblings in the school who were not able to secure a preschool slot."*
>
> *--DPP family interviewee*

> **What would happen to families without DPP tuition credits?**
>
> In the survey, one-quarter of families indicated that without DPP tuition credits, their child would not be able to go to the same preschool (*n* = 54).
>
> Of those …
> - Most could not have sent their child to preschool at all (63 percent).
> - Some would have sent their child to a cheaper (30 percent), and/or a lower quality preschool (33 percent).
>
> *"I don't know what we would've done [without DPP]. I don't know if we would've kept her in a daycare setting or if she would've just stayed at home…"*
>
> – DPP family interviewee

Additionally, 25 percent of families who knew they received a tuition credit reported that without the DPP tuition credit, their child would not have been able to attend their current preschool (see box, left).

In interviews, when asked whether they would have been able to send their child to their current preschool without the tuition credit, one parent said, *"definitely not [to] the school that they're at right now… it was awesome that he did get approved for this particular school."*

We examined whether child, family, and program-level factors predict whether DPP made it possible for families to attend their current preschool. Results of a logistic regression using pooled data since 2016-17[2] showed that families who live in southwest Denver were 2.5 times more likely to report that their child would have been unable to go to their current preschool without DPP (vs. southeast Denver). Community preschool families were 2.9 times *less likely* to

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[1] Among those who were aware they received a tuition credit.
[2] Model chi-square: $\chi (10) = 74.11$, $p < .001$; Community site OR = .34, Hispanic ethnicity OR = 2.06, southwest region OR = 2.48.

report that their child would have been unable to go to their current preschool without DPP (vs. DPS). Other predictors in the model, including home language, race/ethnicity, tier, and program year, were not statistically significant.[1] Overall, results indicate that, controlling for race/ethnicity, tier, and program year, DPP tuition credits made the greatest difference for families in southwest Denver and/or who attended DPS preschools in terms of being able to access their current preschool.

Number of hours/schedule. About one-third of survey respondents in 2018-19 (29 percent) reported that the DPP tuition credit let them increase the number of hours their child attends preschool.[2] Of those, nearly all (92 percent) were enrolled in full or extended day preschool, according to DPP administrative records.

Some interviewees mentioned that the tuition credit impacted their ability to send their child for their desired number of hours or days. Without the tuition credit, one parent commented, *"I think it would have been either she didn't go, or it would have been just a limited number of days a week."* Another mentioned that the tuition credit let them enroll in a preschool that met their scheduling needs; they were able to look, *"specifically for schools that [were] full day because … I work, and I wouldn't have time to drop her off for a couple hours, and go pick her up and then take her back to daycare, and pay double the amount."*

We conducted a logistic regression analysis to assess predictors of whether the DPP tuition credit allowed families to increase the hours their child is in preschool. Results showed that families of color were significantly more likely than white families to report that the tuition credit allowed them to increase their child's preschool hours – Hispanic families were 3.5 times more likely, and families who identified as other races/ethnicities were 3.1 times more likely.[3] In addition, tier 1 families were 2.3 more likely to report that the tuition credit allowed them to increase their child's hours (vs. families in tiers 2-6).

> **Families who reported increasing their child's preschool hours because of DPP were more likely to be…**
> - Identified as Hispanic or a race/ethnicity other than white
> - In tuition tier 1
> - Enrolled in DPS preschools

Conversely, community preschool families were 1.8 times *less likely* than DPS families to report the ability to increase the hours their child attends preschool. Other predictors, including region of the city and program year, were not statistically significant.[4]

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[1] We also ran this model with tuition credit amount received as an independent variable; while statistically significant, tuition credit amount had a very small effect on the likelihood of parents being unable to send their child to preschool without the DPP tuition credit (OR = 1.003).
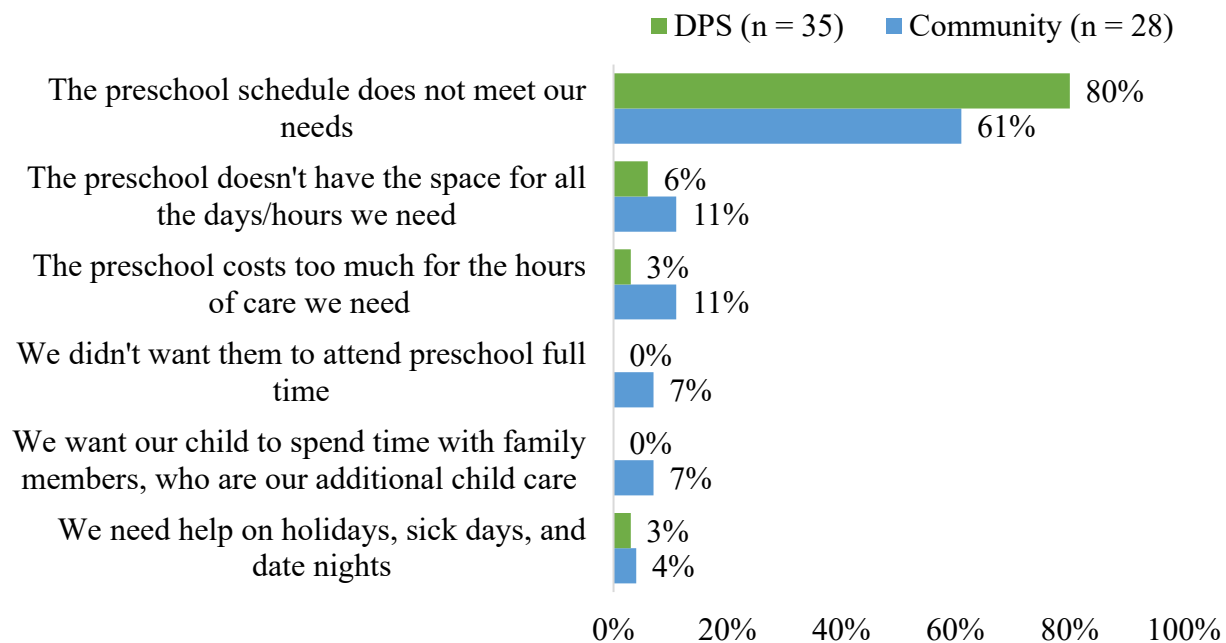[2] Among those who were aware they received a tuition credit
[3] Model chi-square: $\chi (10) = 83.31$, p $< .001$; Community site (OR = .56), other race/ethnicity (OR = 3.10), Hispanic ethnicity (OR = 3.48), tier 1 (OR = 2.28)
[4] We also ran this model with tuition credit amount received as an independent variable; while statistically significant, tuition credit amount had very small effect on likelihood of the DPP tuition credit increase the hours the child attends preschool (OR = 1.004).

Need for additional child care. Among families who completed the survey, 16 percent needed child care in addition to preschool, mostly because their work hours were outside of preschool hours and they needed aftercare to fill the gap (Figure 3). Lack of space and cost were larger issues for community vs. DPS parents. Community preschool parents offered other reasons for needing additional child care, including wanting children to spend time with other family members and not wanting their child to attend preschool full time.

Figure 3. Families' reasons for using additional childcare

■ DPS (n = 35)   ■ Community (n = 28)

Reason	DPS	Community
The preschool schedule does not meet our needs	80%	61%
The preschool doesn't have the space for all the days/hours we need	6%	11%
The preschool costs too much for the hours of care we need	3%	11%
We didn't want them to attend preschool full time	0%	7%
We want our child to spend time with family members, who are our additional child care	0%	7%
We need help on holidays, sick days, and date nights	3%	4%

Preschool continuity. Of survey respondents who knew they received a tuition credit in 2018-19 (*n* = 214), 78 percent said the DPP tuition credit would help send their child to the same preschool for the entire year. Indeed, 94 percent of those families attended preschool from September 2018 to May 2019, according to DPP administrative records.

We analyzed DPP attendance records since 2016-17 to examine factors related to families' continued attendance in preschool during September to May. The biggest predictors of families' attending preschool for a full nine months were preschool type and tier – families attending community preschools were almost twice as likely to remain in attendance (vs. DPS), while families in tier 1 were almost two times *less likely* (vs. families in tiers 2-6).[1]

> **Families *more likely* to remain in attendance September-May:**
> ▪ Community preschools
>
> **Families *less likely* to remain in attendance September-May:**
> ▪ Tier 1
> ▪ Race/ethnicity other than white
> ▪ Northwest Denver
> ▪ Home language besides English or Spanish

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[1]Model chi-square χ (11) = 684.19, p < .001; other race/ethnicity (OR = .63), Hispanic ethnicity (OR = .74), northwest region (OR = .74), 18-19 (OR = .53), tier 1 (OR = .59), other home language (OR = .88), community site (OR = 1.68)

Statistically significant predictors are shown in the box (right).
Overall, it appears that DPP families in community preschools experienced greater continuity. By contrast, families living below the poverty line (tier 1), were less likely to remain in attendance for a 9-month school year, which may be due to factors such as preschool affordability (despite the DPP tuition credit) and/or housing instability.

Quality
Across all DPP families served in 2018-2019, 90 percent attended a high-quality preschool, defined as providers with a level 3 Colorado Shines rating or above.

> 18 percent of DPP parents found out about their preschool's quality from DPP's website

Among survey respondents, the top three ways in which they found out about preschool quality were: tour/visit of the preschool (48 percent), recommendations from friends/family (42 percent), and/or reputation in the community (41 percent). A much lower proportion of families learned about preschool quality from rating organizations: 19 percent from the Colorado Shines rating, 4 percent from CLASS® scores, and 2 percent from National Association for the Education of Young Children (NAEYC) accreditation. Notably, one family interviewee said that they were just *"now learning that the better the rating, the higher the tuition credit [DPP] give[s]"* and that they probably would have looked for a higher quality preschool if they had known earlier.

Families defined preschool quality in many ways during interviews. When asked what made a high-quality preschool, many mentioned the preschool's staff. This included whether there were enough staff, whether teaching staff were supported, and the interactions between staff, students, and parents. One parent said that meeting the staff on an initial visit to the school demonstrated that *"absolutely, this is a good school. I would love to have [my child] here."* Other frequently mentioned attributes were curriculum, language spoken, and classroom structure. One parent expressed wanting an environment in which their child *"would have some classroom structure and where [my child] would be exposed to a variety of activities and intellectually challenged and stimulated."* Other components of quality as defined by parents in interviews included inclusivity, cleanliness, and communication between the school and parents. To one parent, *"The way [the school] reach[es] out to parents and [lets]the parents know what's going on with their children"* was important.

What predicts DPP families accessing a high-quality preschool? We analyzed DPP records from the 2016-17, 2017-18, and 2018-19 program years to examine predictors of families attending a high-quality preschool (with a Colorado Shines rating of 3-5).

Results of a logistic regression analysis[1,2] indicated that the likelihood of DPP families attending a high-quality preschool increased over time, with DPP recipients in 2017-18 being 2.4 times more likely to attend a high-quality preschool (vs. 2016-17), and those served in 2018-19 being 1.8 times more likely (vs. 2016-17).

> Top 3 predictors of attending a high-quality DPP preschool:
>
> - Enrolled in a DPS preschool
> - Speak Spanish at home
> - Tier 1

In addition, families who speak Spanish at home were 2.7 times more likely to attend a high-quality preschool (vs. those who speak English at home), and families in tier 1 were 2.5 times more likely (vs. tiers 2-6). Families who were *less likely* to attend a high-quality preschool included those enrolled in community preschools (17 times less likely than DPS families) and those who live in northwest Denver (1.8 times less likely than southeast Denver).

It may be expected that DPS preschools are more likely to be high-quality, since all DPS preschools have a Colorado Shines rating of 4 or above. That tier 1 families and those who speak Spanish at home are much more likely to attend a high-quality preschool suggests that DPP families from groups who are traditionally underserved are able to access quality preschool.
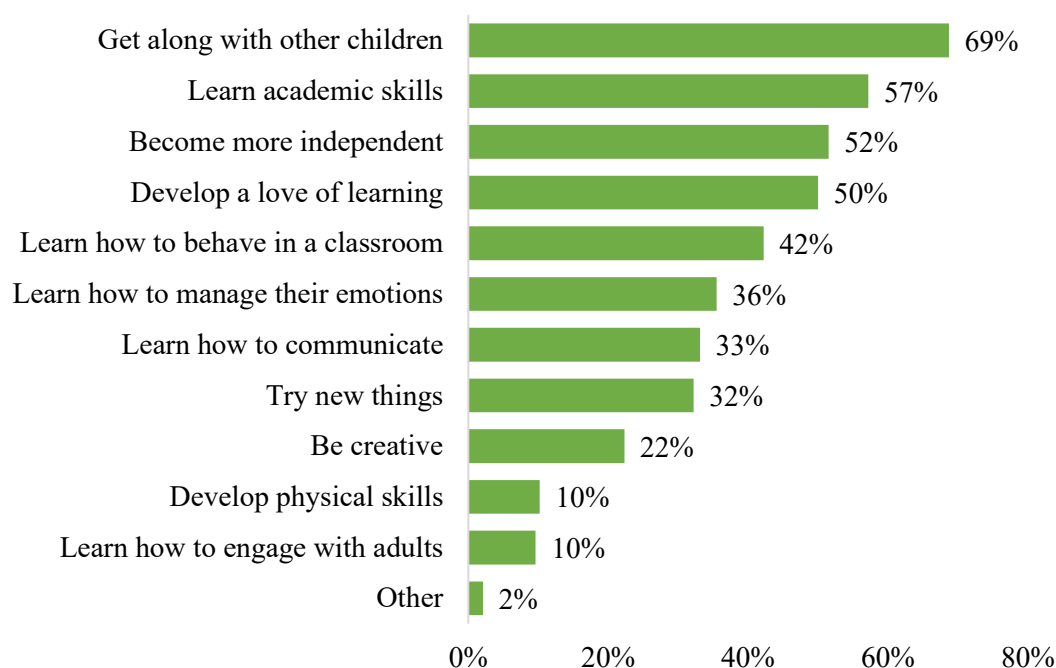
Other Impacts

Benefits of preschool. DPP tuition credits help families access a variety of benefits related to preschool attendance. Parents reported a variety of ways preschool benefits their child (Figure 4), including: learning how to get along with other children (69 percent), learning academic skills (57 percent), and becoming more independent (52 percent). Thus, DPP parents tend to believe that preschool provides a social-emotional and academic foundation for kindergarten.

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[1] Model chi-square: $\chi(11) = 836.19$ $p < .001$; Community site (OR = .07), Spanish home language (OR = 2.70), NW region (OR = .59), SW region (OR = .57), 17-18 (OR = 2.39), 18-19 (OR = 1.79), Tier 1 (OR = 2.50)
[2] We also ran this model with tuition credit amount as an independent variable; while statistically significant, tuition credit amount had very small effect on likelihood of attending a high-quality preschool (OR = 1.003).

Figure 4. DPP families' perceptions of how preschool helps their child (n = 332)

Category	Percentage
Get along with other children	69%
Learn academic skills	57%
Become more independent	52%
Develop a love of learning	50%
Learn how to behave in a classroom	42%
Learn how to manage their emotions	36%
Learn how to communicate	33%
Try new things	32%
Be creative	22%
Develop physical skills	10%
Learn how to engage with adults	10%
Other	2%

Similar benefits of preschool were mentioned in family interviews. One person wanted their child to attend preschool because they, *"thought it would benefit him overall [and] his education."* Many commented that a benefit of preschool was social interaction with other children (see box, right). Some saw exposure to a school or school-like environment as a benefit. One interviewee mentioned that it allowed an adjusment period before kindergarten for children who have *"never been in an environment where they have to follow directions and be around other children."*

> **Preschool benefits**
>
> *"It's just a great opportunity to give them that experience of going to school and getting along with others."*
> – DPP family interviewee

Ability to participate in the workforce or attend school. Many families also reported that having a child in preschool had a positive impact on the ability of adults in their family to work and/or attend school (see box, below).

> **According to survey results:**
> - **84% of parents reported having a child in preschool lets one or more adults in the family work,**
> - **54% found that it allows them to work longer hours, and**
> - **28% were able to go to school.**

Conclusions and Recommendations

According to the results of the 2018-19 evaluation, many families report that DPP positively impacted their ability to access quality preschool. This includes making it possible to send their child to their current preschool, increasing the number of hours their child attends preschool, and/or allowing them to send their child to the same preschool for the entire year. Furthermore, during the 2018-2019 program year, 90 percent of DPP families attended a high-quality preschool.

Importantly, multi-year results suggest that those who experience the greatest benefits from DPP tuition credits tend to represent groups who have historically had less access to early care and education, including families of color, those who speak Spanish, low-income families, and/or those who live in southwest Denver.

Results also suggest that DPP faces an ongoing challenge in terms of families' lack of awareness of DPP tuition credits. DPS families, in particular, are much less likely to know that they receive DPP tuition credits. This has implications for continued support of DPP among Denver voters. In addition, given that DPP enrollment has remained at about 60 percent of Denver's four-year-olds in recent years, greater awareness of DPP tuition credits could be neededto increase family participation in DPP.

Based on these results, the following recommendations are offered to support DPP in promoting access to quality preschool in Denver:

- **For future efforts to expand DPP enrollment, prioritize historically underserved communities** (i.e., families of color, those who speak Spanish, low-income families, and those in southwest Denver). Given that these groups of families report the greatest benefits of DPP tuition credits, this will help to support equitable access to preschool in Denver. Consider working with community organizations who have existing relationships with families to increase access to tuition credits among those who are most in need. Also, based on families' recommendations, DPP could consider increasing its use of advertising and social media, as well as providing information through doctor's offices.

- **Increase awareness of DPP tuition credits among DPS families.** Collaborate with DPS to determine the best ways to communicate about DPP tuition credits to DPS families (e.g., by including this on families' monthly tuition statements).

- **Consider offering DPP tuition credits for three-year-olds,** given many families' interest in using DPP tuition credits for their child's three-year-old preschool year.

- **Encourage families to report their income on the DPP application; monitor the rates of income opt-out over time.** On the DPP application, further emphasize that families will receive a larger tuition credit by reporting their income. Also, continue to monitor the effect of DPS' online application, as well as the launch of a DPP online application, on rates of income-opt out.

OPERATIONS EVALUATION
2018-2019 Program Year

DENVER PRESCHOOL PROGRAM

Evaluation Report 2: Quality Improvement Resource Delivery

Prepared by The Butler Institute for Families
Graduate School of Social Work │ University of Denver

0Introduction

The second in the series of 2018–2019 annual reports for DPP's operations evaluation, this report focuses on quality improvement (QI) resources that preschools receive and how those services are utilized and perceived by providers. DPP QI takes many forms, including coaching, QI navigator support to access DPP's QI resources and navigate the quality rating process, professional development, achievement awards, and spending on QI (such as classroom learning materials, curricula, child assessment tools, etc.), among other supports.

Results included in this report involve providers' experiences with the full menu of QI resources, based on the results of an annual survey and follow-up interviews, with a focus on perceptions of coaching, support provided by QI navigators, professional development, and the quality rating process. To examine the expansion of QI resources into 3-year-old classrooms, results, where applicable, are presented by age group served. Please note, the operations evaluation also examines QI implementation fidelity, and results from this component of the evaluation are reported separately.

Methods

The evaluation of DPP's QI resources utilizes multiple methods to collect primary data from providers. Data sources and data collection procedures are described below.

Surveys

To survey DPP providers, we selected a random sample of one-half of all preschools participating in DPP this year ($n = 123$), stratified by provider type (community center-based, community home-based, and Denver Public Schools) and region of the city.[1] Administrators in community-based preschools were asked to share email addresses for all teachers, assistant teachers, and aides working in preschool classrooms. Similarly, Denver Public Schools (DPS) provided email addresses for all teachers and paraprofessionals working in preschool classrooms. For community sites, administrators were also asked to complete the survey. The provider survey was administered online, with email reminders sent weekly. A total of 587 surveys were distributed.

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[1] The DPP providers who were not selected for this year's sample will be surveyed next year.

Interviews

In spring 2019 evaluators conducted follow-up interviews with a subsample of survey respondents to gather in-depth information about their views of DPP's services. Among survey respondents who expressed an interest in participating in a follow-up interview, the interview sample was randomly selected stratified by region of the city, job role, and provider type. A total of 28 individuals from DPP preschools were interviewed, including 8 administrators in community sites (directors, assistant directors, and family child care providers), 13 teachers in community sites, and 7 DPS teachers. Teacher interviews were conducted with both lead and assistant teachers/paraprofessionals.

> **Teachers/Administrators who completed the survey***
> *n* = 318
>
> **58.5%** worked at Denver Public Schools (DPS); **41.5%** worked in community settings
>
> **53.8%** of DPS respondents were lead teachers[2]
>
> **28.8%** of respondents in community settings were administrators[3]
>
> **44.3%** of survey respondents have worked in their current position for 5+ years
>
> *The Appendix provides a detailed breakdown of survey respondent demographic data.

Analysis

Quantitative data were analyzed using descriptive statistics, including counts, percentages, and means. In addition, bivariate analyses (e.g., t-tests) were conducted to compare groups of respondents, including 1) community and Denver Public Schools providers, 2) administrators and teachers, and 3) teachers who work in three-year-old and four-year-old classrooms. Linear regression models were used to examine the effects of multiple predictors on CLASS® domains. CLASS® scores from the last two years were linked to survey data using provider name[1].

Qualitative data from interviews were transcribed and analyzed using a two-step process. Initially, analysts coded the data with broad thematic categories. This resulted in a list of themes and excerpts from interviews that corresponded with each theme. Then, the analysts proceeded with a second, more fine-grained analysis using sub-themes.

Results

Overall, providers were satisfied with how the QI resources they received met their needs (*M* = 3.29, on a scale from 1 = *not well at all* to 4= *very well*). They also indicated that QI resources were somewhat easy to access (*M* = 3.03; 1 = *very difficult* to 4 = *very easy*).

When looking at the results by survey respondents' job role, administrators were significantly more satisfied with QI resources than were teachers (*M* = 3.73; *M* = 3.23). Administrators (*M* =

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[1] One hundred fifty three cases matched (48 percent)

3.40) also reported having easier access to QI resources than did teachers (M = 2.98).[1] Several administrators elaborated that they call their coach or navigator or use the website to access QI resources. Teachers who reported ease of access to QI resources also referenced the website, and shared that their directors connect them to resources.

Between DPS and community preschools, community providers (M = 3.37) were slightly more satisfied with QI resources than DPS providers (M = 3.23); however, the difference was not statistically significant. Community providers (M = 3.13) also rated QI resources as easier to access than did DPS (M = 2.96).[2]

Important to note, some providers reported that they did not know what DPP QI resources entailed. For instance, one provider shared "*I don't know what is available and how to access resources, who to talk to, and to what extent I can reach out to DPP.*" Overall, approximately 33 individuals provided similar feedback, and nearly all (75.8%) were DPS teachers or paraprofessionals. This may be because QI resources for DPS schools are coordinated centrally for the district. This finding is also consistent with feedback provided by coaches and providers during separate interviews in spring 2019 that DPS sites frequently work with multiple coaches and are not always aware of the sponsor (e.g., DPP).

What QI resources do DPP programs use?

As mentioned above, DPP's QI consists of a menu of various resources. According to Figure 1, the top three resources that survey respondents reported using were CLASS® observations (70.8 percent), professional development/trainings (69.2 percent), and coaching support (64.3 percent).

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[1] QI satisfaction by role: $t(265)$ = 3.882, p = .000; ease of access to QI by role: $t(307)$ = 3.359, p = .001
[2] Ease of access by site type: $t(307)$ = 2.099, p = .037

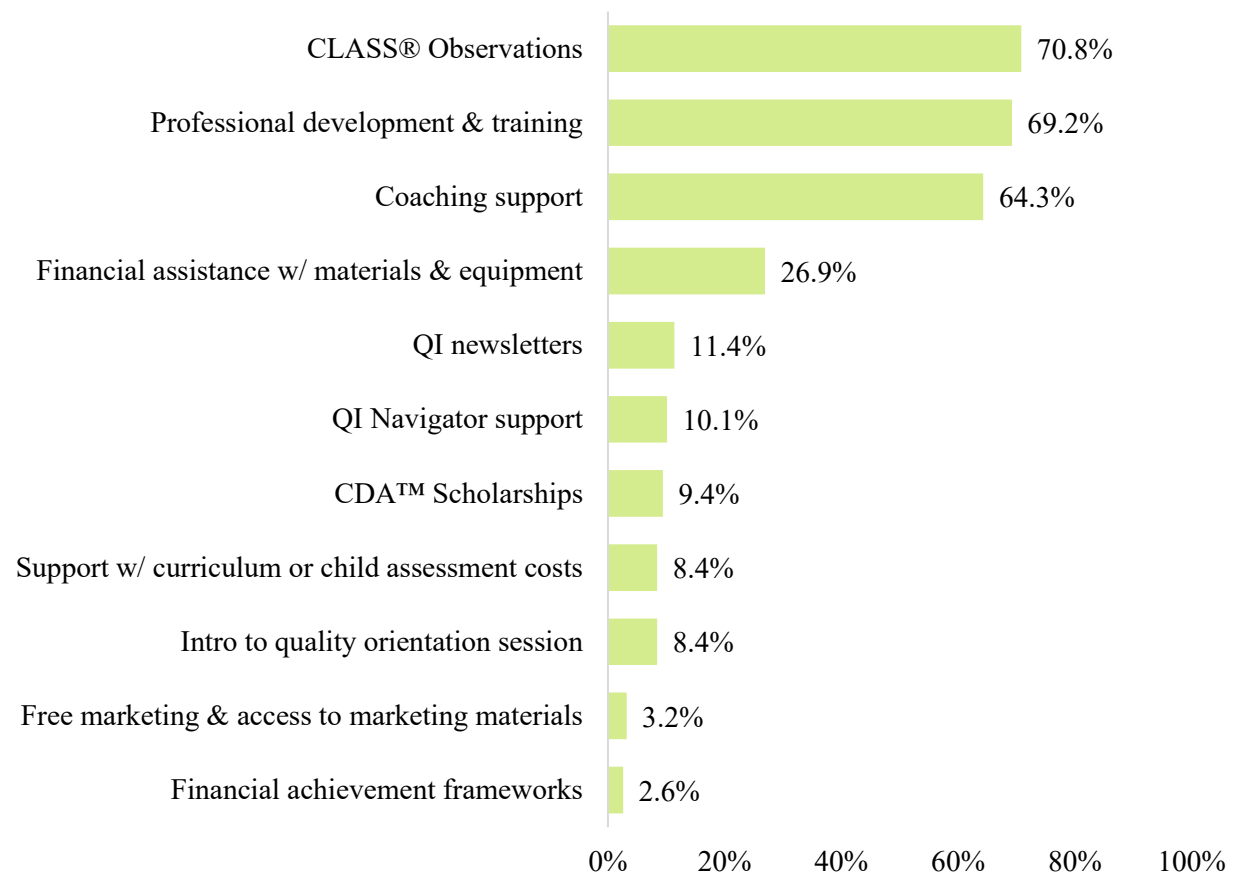**Figure 1.** Utilization of DPP Quality Improvement Resources (*n* = 308)

Figure 2 shows the utilization of QI resources by job role. Important to note, teachers reported utilization for *themselves*, whereas administrators reported utilization for their *programs*. The top three resources utilized by teachers were CLASS® observations (71.3 percent), professional development and trainings (70.2 percent), and coaching support (61.4 percent). While administrators also utilized coaching support (86.1 percent) and CLASS® observations (66.7 percent) for themselves or their program, their third most utilized resource was QI Navigator support (63.9 percent). This is likely because administrators typically work closely with QI Navigators to make purchases (e.g., financial assistance with materials and equipment).

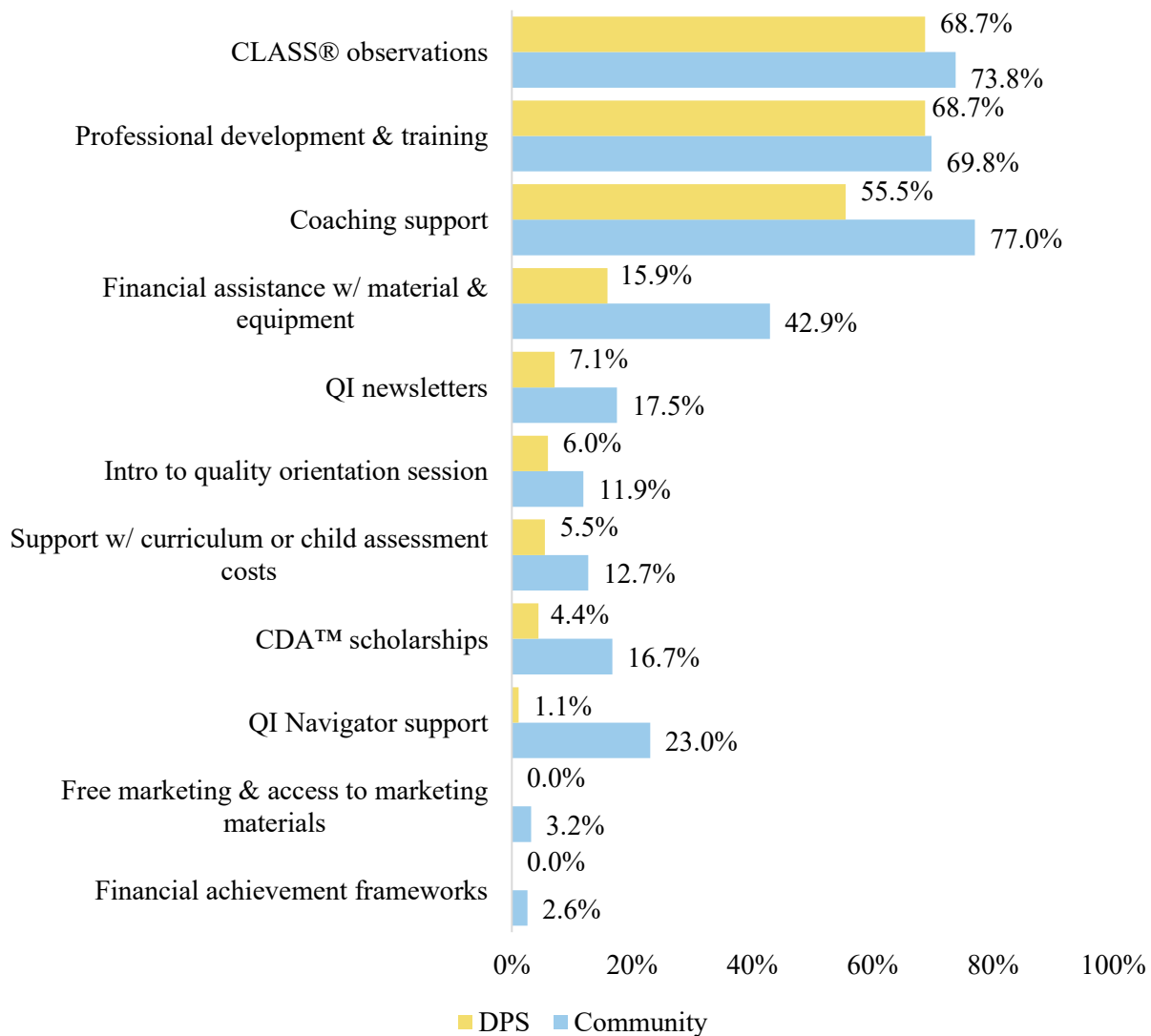**Figure 2.** Utilization of Quality Improvement Resources by Role (*n* = 308)
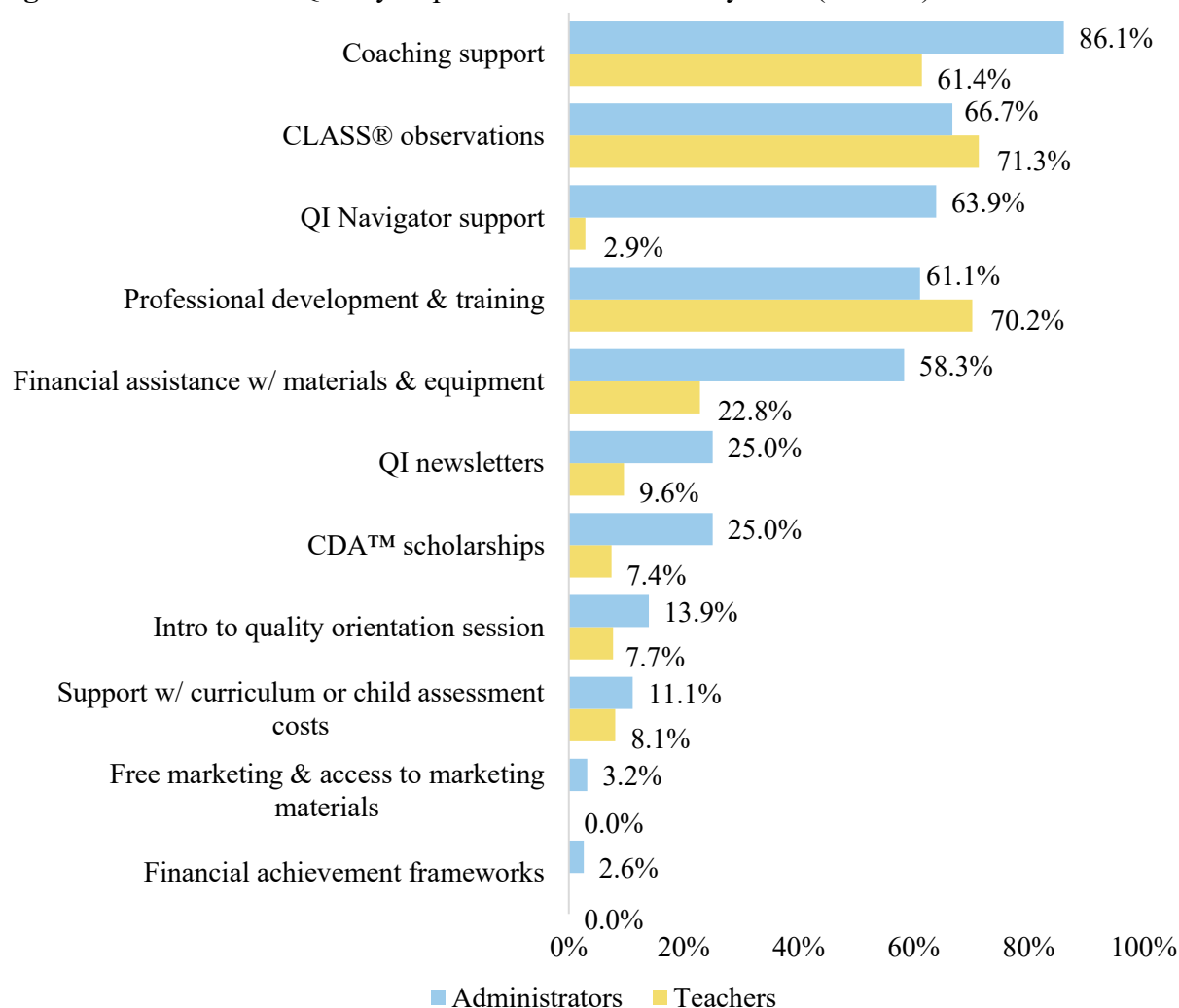
CLASS® observations, coaching support and professional development/trainings were also the most utilized resources across DPS and community programs. Although the top three most utilized resources were the same, there were several statistically significant differences between DPS and community resource use. First, although coaching support was one of the most utilized resources for both provider types, community sites reported significantly more coaching support than DPS providers.[1] Community sites also utilized significantly more financial assistance with materials and equipment, quality improvement newsletter, support with curriculum or child assessment costs, CDA™ scholarships and Quality Improvement Navigator support.[2]

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[1] Coaching support by site: $t(306) = 3.955$, $p = .000$
[2] Financial assistance with materials and equipment by site: $t(306\_ = 5.468$, $p = .000$; quality improvement newsletter by site: $t(306) = 2.832$, $p = .005$; support with curriculum or child assessment by site: $t(306) = 2.247$, $p = .025$; CDA™ scholarships by site: $t(306) = 3.693$, $p = .000$; QI Navigator support by site: $t(306) = 6.710$, $p = .000$;

Figure 3. Utilization of Quality Improvement Resources by Setting (*n* = 308)

Resource	DPS	Community
CLASS® observations	68.7%	73.8%
Professional development & training	68.7%	69.8%
Coaching support	55.5%	77.0%
Financial assistance w/ material & equipment	15.9%	42.9%
QI newsletters	7.1%	17.5%
Intro to quality orientation session	6.0%	11.9%
Support w/ curriculum or child assessment costs	5.5%	12.7%
CDA™ scholarships	4.4%	16.7%
QI Navigator support	1.1%	23.0%
Free marketing & access to marketing materials	0.0%	3.2%
Financial achievement frameworks	0.0%	2.6%

Between 3-year-old and 4-year-old classrooms, there were no significant differences in resource use except regarding CDA™ scholarships. Staff working in 3-year-old classrooms utilized CDA™ scholarships more (14%) than did staff in 4-year-old classrooms (4%)[1].

In reflecting on DPP's expansion to funding 3-year-old teachers' QI trainings, one director shared how much she appreciated that change as it allowed her to support teachers of even younger children. Specifically, she shared, "*the fact that our three-year-old teachers get to be a part of now all of those free trainings, in the long run, frees up more money for me to put toward my toddler teachers because there's nothing for the toddlers. I mean, that makes a big difference to me because now, if we need training or we need to pay for training, now I have a little bit more money freed up for my toddler teachers than I did when I had to support four additional teachers in the three-year-old program. That made a big difference.*"

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[1] *t*(173) = 2.124, *p* = .035

Quality Navigator Support

Quality navigators support DPP programs in utilizing their QI resources and navigating the quality rating process. As stated above, approximately one in ten (9.7 percent) of providers surveyed reported utilizing a quality improvement navigator. Working with a QI Navigator was higher among administrators (63.9 percent) than among teachers (2.9 percent).

Many administrators cited positive experiences with their QI navigators. Respondents rated their navigator's helpfulness on a scale of 1 = *not at all* to 4 = *very much*, and, on average, administrators rated their navigator as helpful ($M = 3.59$). In an interview, one person said, *"I think [my QI navigator] is amazing. ... I'm sure they're spread pretty thin but they do a great job. They never drop the ball. They always gets back [to me] and get the information that you need. I think the program is doing an awesome job."*

Professional Development

DPP's professional development (PD) opportunities for preschools, which include a wide variety of trainings, were one of the most frequently utilized quality improvement resources during the current school year. Respondents rated the helpfulness of PD and training on a scale of 1 = *not at all* to 4 = *very much*, and, on average, directors ($M = 3.76$) and teachers ($M = 3.53$) rated PD as helpful.

> **Perception of professional development opportunities**
>
> *"I had some experience, but I knew very little about early childhood until I dove into it. So, for me it's been super beneficial just to get that perspective, and you know, I feel a lot more competent talking to parents."*
>
> -DPP Teacher

When asked what makes the biggest different in improving preschool quality, in a follow-up interview, one teacher said, *"training always helps the quality. I think that's the most important [QI resource] because then we can help children in the classroom."* Most (68.5%) staff felt the number of trainings offered by DPP was "just about right"; a smaller portion indicated it was not enough (7.5%), too much (1.6%), or they did not know (22.4%).

Convenience. On average, preschool staff rated the location of the trainings as *moderately convenient* (directors: $M = 2.91$; teachers: $M = 3.06$; 1 = *not convenient at all,* 4 = *very convenient)*. Several providers were interested in attending trainings in central Denver or in the southern region of Denver. In general, providers' main concerns regarding trainings had to do with easy and safe access to public transportation to the training sites, high traffic at times of trainings, as well as parking availability. Directors and teachers also found the days/times of the trainings to be *moderately convenient* ($M = 3.12$ and $M = 3.28$). Some providers expressed

interest in attending more trainings in the summer and on weekends due to the inability to get substitute coverage during the school day/year.

Providers can register for trainings through a website called ecConnect. Overall, most (54.2%) providers found registering for trainings through ecConnect to be "easy" or "very easy" compared to those who found it difficult (9.7%). Notably, however, many providers (36.0%) reported not using ecConnect.

Topics. On average, staff reported that training topics were moderately relevant ($M = 3.44$; $1 = $ *not relevant,* $4 = $ *very relevant*). In terms of future training topics, respondents offered a range of ideas from working with challenging behaviors to learning how to engage with parents. A list of common topic areas and specific examples are shown in Table 1. Many of these topics were suggested based on respondents' perceptions of the needs of their preschool and on their own experiences.

Survey participants also suggested offering trainings of varying levels of depth so that everyone could find a training that is beneficial to them. One provider said, *"A lot of my colleagues have their master's in early childhood education and what they need from professional development is a lot different than [someone] who is just out of high school... The one-size-fits-all training is not very effective."*

Table 1. Suggested future training topics

Topic	Examples
Work environment	Retention; classroom set-up; teacher wellness/mental health
Supporting child development	Kindergarten readiness; play-based learning; social-emotional development; brain and language development; early literacy; math/science/technology activities for children
Assessment/curriculum	Child assessment; inclusive curriculum; project approach; advanced CLASS® PD; Montessori perspective
Classroom management	Behavior strategies; family collaboration; positive reinforcement strategies; Autism Spectrum Disorder
Children with disabilities	Supporting students with disabilities; inclusive classrooms
Administrative	Tuition credit process and general information, recruitment
Certification	ECT qualification; state level licensing requirements; classes towards earning director qualification
Trauma	Trauma-informed care and classroom strategies; identifying child neglect and response
Language/culture	Spanish language immersion programs; cultural responsiveness; diversity training; Bilingual CLASS® training; dual language PD
Safety	CPR/first aid; first aid procedures

Coaching

Survey respondents rated helpfulness of coaching support from 1 = *not at all* to 4 = *very much*, and, on average, directors and teachers rated coaching support as helpful (M = 3.77 and M = 3.57 respectively).

In interviews, some directors mentioned that although their teachers receive coaching, they do not, aside from quick check-ins with coaches. However, other directors did report receiving coaching from DPP. Some directors would like to receive coaching, but did not feel able to utilize coaching because it may limit the availability of coaching hours for teaching staff.
In terms of positive experiences with coaching, providers appreciated consistency in working the same coach over multiple years, sustaining a strong, trusting relationship with the coach, and having a coach who is passionate about the subject matter. In instances when a coach may not be a good fit with a preschool program, one provider shared that it would be helpful to reassign

coaches, and for providers to know they have the option. "*I think a lot of it is making sure that we have the right fit. Maybe we didn't fit with [the coach's] philosophy either, but I think that's a real critical piece. I didn't know I could ask for a new coach... I think that's something to make sure that we all know is that, 'look, if this is not the right fit, there are other people out there that you might be able to match better with', that would be helpful.*"

Consistent communication was one of the most frequently cited components of a successful coach-coachee relationship. Direct communication with teachers who are receiving the coaching (instead of administrators) was suggested as a way of improving communication. In one instance a teacher did not receive coaching because the director was serving as an intermediary, trying to schedule coaching, but the teacher never received the necessary information.

> "*Coaching is by far the best way I can spend my dollars. The more coaching hours I can get, the more I get people in our building helping support our teachers in doing the work that needs to be done in this building. That's really, really important to me ... It's not that I'm not grateful for the money, but the coaching for sure has been incredibly valuable.*"
>
> -DPP Provider

Feedback from coaches was also highly valued. Specifically, providers appreciated feedback on how to improve their teaching practice, a balance of receiving advice and being asked questions, and summaries of what was discussed during a coaching session.

In terms of recommended improvements, one person found that coaching came too late, and would have been more helpful prior to their CLASS® observation, "*CLASS® coaching support overlapped with [the] CLASS® observation this year. [It would be] better if this was not the case and coaching happened prior to the observation.*"

A few providers thought that coaching hours would be most effective if they were targeted to newer teachers. Others thought it would be helpful for paraprofessionals and assistant teachers to receive coaching so that all teaching staff are well-informed and prepared to support the children in their classroom. For instance, one person shared, "*Please allow more coaching sessions and allow coaches to coach paras also!*" Important to note, paraprofessionals and assistant teachers/aides are eligible to receive coaching hours through DPP. However, most frequently, administrators decide how coaching time is allocated (e.g., who receives coaching). Among staff who completed the survey, 40.6% of assistant teachers, aides, and paraprofessionals reported utilizing coaching. Several providers also wished that coaching offered greater alignment with the Montessori perspective.

Quality Ratings

DPP preschools receive two main quality ratings: CLASS® and Colorado Shines. As mentioned above, these are also the most common topics in which providers receive coaching.

CLASS®. On a scale of 1 = *not at all familiar* to 4 = *very familiar-*, providers were moderately familiar with the CLASS® domains of Classroom Organization ($M = 3.29$), Emotional Support ($M = 3.25$), and Instructional Support ($M = 3.17$), respectively. Many providers found the

CLASS® observation to be helpful. Specifically, on a scale of 1 = *not at all* to 4 = *very much*, directors and teachers rated the CLASS® observation as helpful (*M* = 3.59 and *M* = 3.34, respectively).

In a follow-up interview, one person explained that the CLASS® tool was helpful because *"teachers can get in a rut, especially after teaching a long time. So, I think it's good to know what you're doing well and what you could improve on. I think that's beneficial."*

Survey respondents generally rated all aspects of the rating process moderately well (**Error! Reference source not found.**). However, the lowest rated component of the CLASS® observation process was the timing of results and feedback. One person said, *"Not having it take a month-and-a-half to get [the results] back [would be helpful] because, at this point, the school year's done in four weeks and it will be important to have that information and to reflect on it. But, I can't imagine there's very much that's going to go into practice between now and the end of the year because we're prepping for graduation, getting kids ready for kindergarten, and there's a lot happening right now [...] having [the CLASS® observation] earlier in the year would also be helpful."*

Figure 1. Provider ratings of the CLASS® process (*n* = 258 – 272)
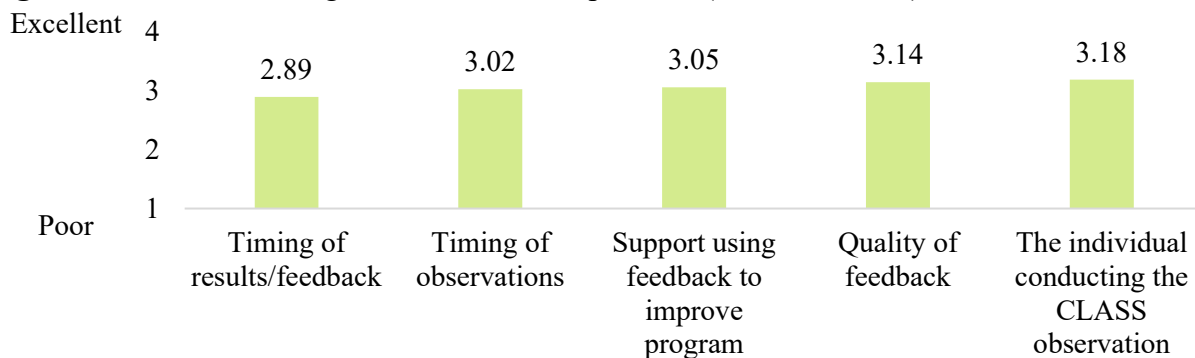
Perceptions of support using feedback seemed to vary among providers. Some providers felt that the process of receiving feedback was useful and understandable, while others would have preferred more explanation and specific next steps:

"We went over the results with the rater, but I'd like to go over them in more depth. We went over them pretty quick, [the rater] just looked up the scores and looked at a few of the things we missed. I'd like to go over and have a few notes on what needs to increase or what needs to change in certain aspects to make sure that I feel better the next time the rating comes."

DPS providers specifically discussed the different types of observations they receive and would prefer that the observations were better aligned to avoid redundancy and stress, *"I do believe CLASS® observations should trump our LEAP observation from the school. Some years [...] we're getting LEAP observations from the school and then we have our big CLASS® observation, which can be a stressful year."*

> *"I think overall [CLASS® observations] are good, and they're great reminders of what best practices are and to strive for.*
>
> *I do think they're stress-inducing for teachers because they're random and you don't know when they're going to come ... So to be able to know like, 'Oh this is the week they're coming, let's get all our ducks in a line,' would be really helpful. I know it's to see a naturalistic observation ...but to be graded on one of your hardest days doesn't feel good."*
>
> -DPP Teacher

Providers thought longer observation windows, more than one observation per year, and better alignment between coaches and raters may yield more accurate results. A few mentioned how it might be easier to see improvement if observations were longer or spread out over a few days. One provider explained, *"[our] coach gets more time to see things unfold and to see different parts of the day. Whereas the CLASS® observers, they come but if it doesn't happen in that twenty minutes or they didn't hear it, you're marked [down]."* A few providers thought more alignment between coaching and rating was needed. *"It's tough because you're getting coached from one person, but then you're being rated [by] another person, and sometimes what they say conflicts, or sometimes it's not exactly what the actual observer is looking for."*

Predictors of CLASS® Domains. Linear hierarchical regression models were used to understand potential predictors of CLASS® domain scores. The following independent variables were considered: coaching topic, coaching quantity, tenure, education, preschool type (DPS vs. community), age group served, and job stress. The only significant predictor, across domains, was years of experience. Specifically, teachers with two years of experience of less in their current position had lower Emotional Support scores ($B = -0.15$; $p = .02$) and lower Classroom Organization scores ($B = -0.14$, $p = .03$) as compared to teachers with three or more years of experience in their current position. There were no significant predictors of Instructional Support.

Colorado Shines. Providers expressed mixed feelings about Colorado Shines rating process, and the associated coaching. Some felt that the coaching they received was not aligned with the rating, which resulted on lower ratings. Others thought the coaching was very helpful. For instance, "*I had lots of coaching, and that really helped towards my Colorado Shines score. I took advantage of that, and it did make a difference compared to when I hadn't had coaching, or I think when I first started [DPP], the coaches weren't as knowledgeable as they are now, but having a knowledgeable coach is pretty priceless.*"

> *"I mean, we got a five, so it's not about the five to me. It's the fact that now our parents get more money. That's what matters, and we get money for coaching, which is what matters to me because the coaching is far more important in the long run to us because it gives us what we … What we value is that relationship with somebody who's an expert in something."*
>
> -DPP Provider

In terms of the rating itself, some felt like the rating did not accurately represent the quality of their program. Others expressed that they would not participate in Colorado Shines if it was not a requirement of DPP. Some are motivated to get a higher rating simply for families they serve (e.g., to get more financial assistance) and to access more coaching.

Recommendations

Increase awareness of and access to QI resources across settings and job roles. On average, survey respondents indicated both satisfaction with and access to QI resources. However, important differences emerged when looking by job role and setting. First, administrators were more satisfied and indicated greater access to QI resources than teachers. Overall, there appears to be a top-down approach to dissemination related to QI resources. Specifically, administrators are more likely to work with navigators who connect them to resources and troubleshoot when issues arise. Subsequently, teachers often rely on administrators to share information related to QI resources.

In the survey, many teachers (both lead and paraprofessionals/assistants) indicated that they were not aware of what QI resources were available, particularly DPS staff, suggesting valuable information is not reaching them. Additionally, only about 10% of teachers surveyed indicated that they receive QI newsletters. To promote ubiquitous awareness of and access to QI resources, DPP could consider dissemination strategies specific to teachers. Although the top-down approach to communication may be difficult to amend due to the large number of programs participating in DPP, DPP could consider creating materials specific to teachers (e.g., handouts, webpages, information on how to sign-up for QI newsletters, etc.) that administrators could easily disseminate to staff. Administrators should be encouraged to share information with staff who are not aware of how to access resources, especially newly hired staff. Furthermore, materials should include information about who to go to for questions or concerns.

Additionally, staff may not always be aware when they are attending DPP-sponsored trainings or utilizing DPP-sponsored coaching. As such, it may be beneficial to increase branding of materials that coaches use with providers to ensure visibility of the DPP logo on all materials and regularly remind teachers how their coaching is supported by DPP funding. As has been previously reported, the multitude of professional development offerings by other funding sources can result in confusion regarding the source of the opportunity.

Explore ways to expand training opportunities for all staff. It would be beneficial for DPP to explore ways to increase training opportunities for various job roles, including administrators, assistants/aides/paraprofessionals, and those working with children before preschool.

First, administrators not already receiving coaching acknowledged an interest in coaching, but in some cases given the limited availability of their assigned coach, administrators chose to direct resources to teaching staff. Given the importance of strong leadership, and acknowledging that leaders also require support, it would be advantageous for additional administrators to have access to coaching and/or reflective supervision to advance their professional development. Leadership coaching could be a separate entity in which administrators do not feel they need to compete with teaching staff in order to secure coaching time. Similarly, some paraprofessionals and assistants/aides did not feel coaching was accessible to them. Offering coaching to all

classroom professionals, possibly via group coaching, may be especially helpful in building capacity of staff across job roles.

Finally, building on the success of DPP's expansion of QI funding into 3-year-old classrooms, DPP should explore all possibilities and partnerships to support staff in infant and toddler classrooms as well. Recognizing that infants and toddlers quickly become preschoolers, it is beneficial to support children, and the professionals who are working with those children, during infancy and toddlerhood. Furthermore, allowing infant and toddler teachers to attend trainings for free, similar to their preschool counterparts, leads to greater parity in opportunity, especially within centers that serve children birth to age five.

Improve CLASS® feedback. In light of the large amount of time and energy directed at preparing for CLASS® observations, including most coaching focusing on CLASS®, efforts should be made to improve the feedback process. To the extent possible, more in-depth feedback should be provided more quickly. Especially among programs that follow a traditional school year calendar, it can be difficult for teachers to receive feedback at the end of the year due to the inability to implement changes in a timely manner. To facilitate changes in practice, it could be helpful to build in more time after CLASS® observations for teachers to receive coaching specific to strengths and areas of growth identified via the observation.

Appendix

Table A1. Survey Respondent Demographics

	n	%
Type of Preschool	318	DPS: 58.5% Community: 41.5%
Job Title	318	Administrator (Program Owner, Director, Assistant Director, Family Child Care Provider, or Pre-K/EC Administrator): 11.9% Lead Teacher or Teacher: 56.9% Assistant Teacher, Aide, Para-Professional, or Substitute Teacher: 31.1%
Job Titles Among DPS Sites		Lead Teacher or Teacher: 53.8% Assistant Teacher, Aide, Para-Professional, or Substitute Teacher: 46.2%
Job Titles Among Community Sites	132	Administrator (Program Owner, Director, Assistant Director, Family Child Care Provider, or Pre-K/EC Administrator): 28.8% Lead Teacher or Teacher: 61.4% Assistant Teacher, Aide, Para-Professional, or Substitute Teacher: 9.8%
Years in Current Position	318	Less than 1 year: 16.4% 1 to less than 3 years: 17.3% 3 to less than 5 years: 22.0% 5 to less than 10 years: 21.3% 10 or more years: 23.0%
Race/Ethnicity	294	White: 45.3% Hispanic, Latino, or Spanish origin: 35.4% Black or African-American: 10.5% Other: 5.1%
Gender	296	Female: 94.6% Male, Non-binary/third gender, Prefer to Self-Describe: 5.4%
Age	282	Range: 19-72 Mean: 41.2 SD: 12.0

DENVER PRESCHOOL PROGRAM

OPERATIONS EVALUATION
2018-2019 Program Year

Evaluation Report 3: Workforce Summary

Introduction

This report, the third in a series of reports for the 2018-2019 Denver Preschool Program (DPP) operations evaluation, focuses on the workforce in DPP preschools.

Results are based upon multiple data sources, including:
〉 **A workforce survey** completed by 318 DPP providers.
〉 **Follow-up interviews** with 28 DPP providers.
〉 **Administrative data** on quality improvement resources, obtained from Denver's Early Childhood Council; and preschool quality ratings from DPP administrative records.

Quantitative data were analyzed using descriptive statistics, including counts, percentages, and means. In addition, bivariate analyses (e.g., t-tests and chi-square) were conducted to compare groups of respondents, including 1) community and Denver Public Schools providers, and 2) administrators and teachers. Hierarchical linear and logistic regression models were used to examine the relationships between provider characteristics and outcomes, such as use of developmentally appropriate practices, job stress, intent-to-stay, and pay.

Qualitative data from interviews were transcribed and analyzed using a two-step process. Initially, analysts coded the data with broad thematic categories. This resulted in a list of themes and excerpts from interviews that corresponded with each theme. Then, the analysts proceeded with a second, more fine-grained analysis using sub-themes.

For more information about these data sources and methods, see "Evaluation Report 2: Quality Improvement Resource Delivery."

Results

This report describes the workforce in DPP preschools, including their job roles, demographic and educational characteristics, motivation and intent-to-stay, social-emotional and physical well-being, and financial well-being.

Job Role and Demographic/Educational Characteristics

Of those who participated in the workforce survey, teachers made up 88 percent of respondents, and the remaining 12 percent were administrators. "Teachers" include participants who identified as lead teachers or teachers, assistant teachers, aides, or paraprofessionals, and substitute teachers. "Administrators" consist of participants who identified as program owners, directors, assistant directors, family child care providers, and Pre-K or early childhood administrators. More specific breakdowns are provided in Appendix A.

Participants mostly identified as female (95 percent); the remaining 5 percent identified as male, non-binary/third gender, or preferred to self-describe. In terms of race and ethnicity, 49 percent of providers identified as white, 35 percent identified as Hispanic, Latino, or Spanish origin, 10 percent identified as Black or African-American, 2 percent identified as Asian, and 3 percent selected "other". The average age of survey participants was 41 years.

Many participants held a master's degree (29 percent) or a bachelor's degree (23 percent) as their highest degree. Thirty-nine percent of participants had a Child Development Associate (CDA) Credential™. Years of experience varied (Figure 1); providers reported being in their current position for an average of 4.69 years.

Figure 1. Number of years in present position (*n* = 318)
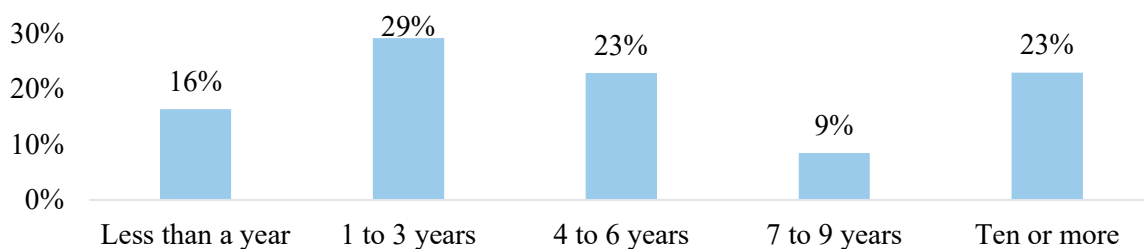
Age groups served by these providers (*n* = 282) included 13 percent 3-year-old classrooms, 50 percent 4-year-old classrooms, and 36 percent mixed-age classrooms. The average ratio in these classrooms was one provider to eight children (minimum = 1, maximum = 22). Of those who responded (*n* = 272), many speak all (or mostly all) English in their classrooms (67 percent),

while 17 percent speak mostly or all Spanish, and 13 percent speak a mix of English and Spanish.

Motivation and Intent to Stay

Most providers are motivated to work with young children because they consider it their personal calling or their career/profession (Figure 2). Consistently, during interviews, many providers mentioned that working with children and watching them grow was the most rewarding aspect of their job.

> *"The most rewarding [aspect of my job is] getting to see how far the kids progress. You really can see it at that age. When they really start to get something, and they ask questions. You can slowly see them mastering what you're teaching them, whether it's an academic concept or even social-emotional, how to interact with friends and peers. But you can just really see it as it happens, which is really cool."*
>
> - *DPP Provider*

Building family relationships was another motivating factor that consistently came up during interviews. One provider said, *"I love the partnership between our parents, our teachers, and our children. I love being able to support those relationships."*

Figure 2. Motivation for working with young children (*n* = 282)
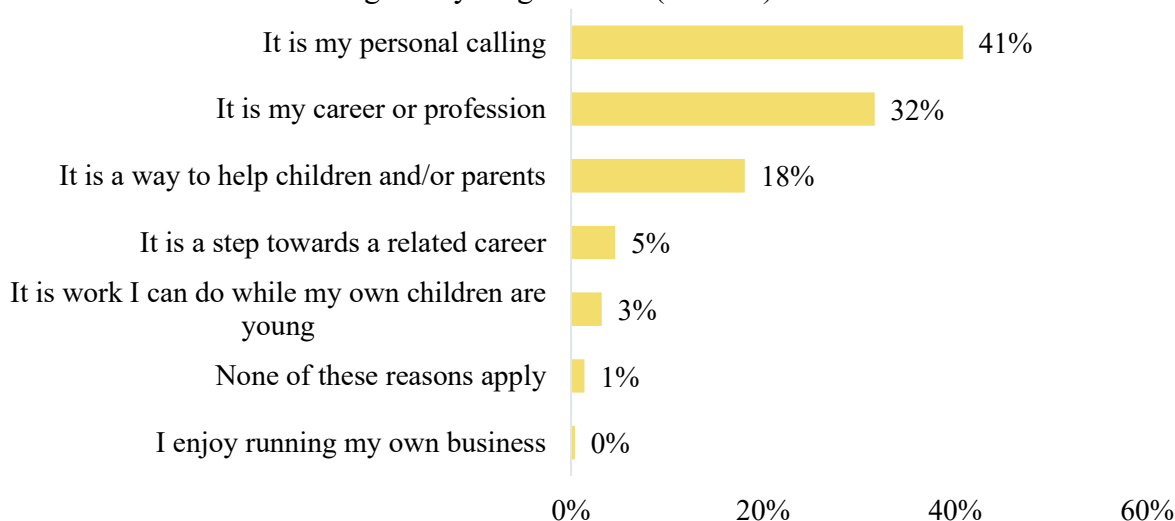

Overall, DPP providers indicated intent to stay in their present position. Specifically, 45 percent intended to stay for 10 or more years (Figure 3). Community-based lead teachers (25 percent) and DPS paraprofessionals (19 percent) expressed the greatest intent to leave their current positions within the next two years.

Figure 3. Intent to stay in present position ($n = 312$)
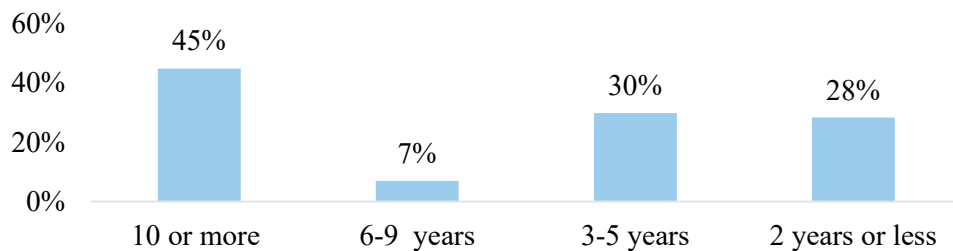
Those who planned to leave within the next two years were asked to identify where they intend to go when they leave their current position (Figure 4). Overall, the highest portion of providers indicated that they intend to teach grades K-12 (23 percent).

Figure 4. Reasons for intending to leave present position ($n = 57$)[26]
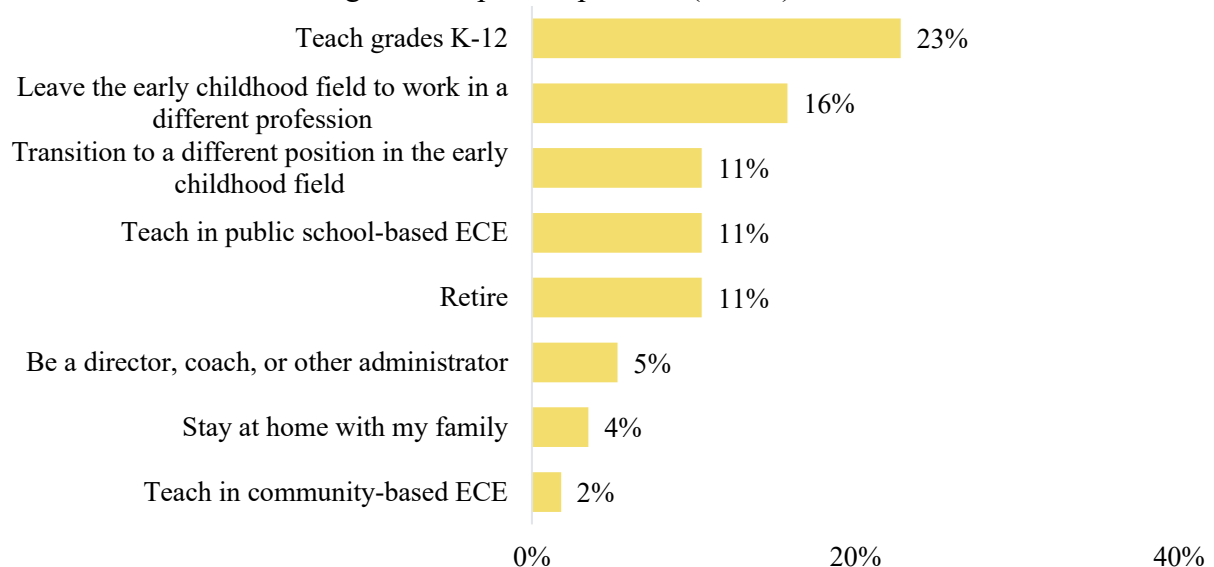
Community Lead Teachers and DPS Paraprofessionals had the highest rates of intending to leave their current positions, with the desire to work in K-12 as the most common reason for leaving among both groups. DPS Lead Teachers intended to leave due to retirement. Administrators reported intending to move to different positions in the early childhood field (Table 1).

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[26] Other reasons providers gave for intending to leave their present position included: taking a different position within the same school, moving, changing profession, desire to work with another grade level

Table 1. Intent to leave and reasons for leaving by job role and setting

Job Title & Setting	Intend to Leave Current Position Within Two Years	Most Common Reason for Leaving
DPS Lead Teachers	15%	Retirement (27%)
Community Administrators	13%	Transition to different early childhood position (40%)
Community Lead Teachers	25%	Teach K-12 (20%)
DPS Paraprofessionals	19%	Teacher K-12 (31%)
Community Assistants	8%	n/a

Teachers' Use of Developmentally Appropriate Practices

Teachers were asked to identify how often children in their classroom engage in various activities on a scale from *1 = Almost Never (less than monthly)* to *5 = Very Often (daily)*[27]. Some activities were developmentally appropriate for preschool children, while others were not. Items deemed *not* developmentally appropriate were reverse-scored to calculate an overall estimate of teachers' use of developmentally appropriate practices ($\alpha = .70$).

On average, teachers reported regularly engaging in developmentally appropriate practices ($M = 4.04$). Specifically, the three most regularly utilized practices included selecting from a variety of learning areas and projects (i.e., dramatic play, construction, art, music, science experiences, etc.) ($M = 4.72$); singing, listening and/or moving to music ($M = 4.68$); and building with blocks ($M = 4.67$). The least commonly used practices included placing children in time-out ($M = 1.73$) and separating children from their friends to maintain classroom order ($M = 2.14$).

What predicts DPP teachers' use of developmentally appropriate practices?
We ran a linear hierarchical regression model to examine factors related to teachers' engagement in developmentally practices. The model included the following predictors: coaching topic (with emotional support and classroom organization combined)[28], coaching quantity, job tenure (0-2 years vs. all other), education level (less than a bachelor's vs. all other), type of site (DPS vs. community), as well as the job stress, self-care, and school climate scales.

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[27] Burts, D.C., et al. (2001). *Teacher Beliefs and Practices Survey: 3-5 Year-Olds*.
[28] These CLASS® domains were combined due to multicollinearity.

Results showed that self-care was a significant predictor of using developmentally appropriate practices[29]. In other words, teachers who utilized more self-care practices at work also reported using more developmentally appropriate practices with children. By contrast, having less than a bachelor's degree[30] and more job stress[31] predicted less frequent use of developmentally appropriate practices.

> **Significant predictors of using developmentally appropriate practices:**
>
> - Greater self-care
> - Less job stress
> - Higher levels of education

We also tested whether there was a coaching quantity by job stress interaction, but it was not significant. Thus, the amount of coaching teachers use does not appear to moderate the relationship between job stress and use of developmentally appropriate practices.

Overall, these results suggest that teachers' well-being, specifically in terms of their self-care practices and job stress levels, predicts their use of developmentally appropriate practices. In addition, teachers with higher levels of education engage children more frequently in developmentally appropriate practices.

Social-Emotional and Physical Well-being

Survey respondents were asked about their social-emotional and physical well-being including job stress and challenges, professional self-care practices, health related quality of life, and workplace climate.

Job Stress

Job stress was assessed differently for teachers and administrators.

Teachers completed a subset of items from the Job Stress Inventory[32] indicating frequency of occurrence with *1 = rarely/never* to *5 = most of the time*. The job resources subscale (α = .84) captures positive aspects of the work, such as receiving praise from parents, feeling respected, and knowing that the work they do is important. Teachers reported that these events happen frequently (*M* = 4.21).

> *"I would say the most stressful is staff retention. It's just so hard to keep people in EC in general. So, whether it's like, the pay or a lot to deal with for people, so it seems like turnover is super high no matter where you're at. And so that's probably what I struggle with the most"*
>
> *-DPP Provider*

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[29] *B* = 0.15, *p* = .01
[30] *B* = -0.20, *p* = .001
[31] *B* = -0.11, *p* = .004
[32] Curbow, B. (2000). *Child Care Worker Job Stress Inventory.*

The demands subscale ($\alpha = .61$) captures challenging aspects of the work, such as parents arriving late to pick up their children, children demonstrating challenging behaviors, or purchasing classroom supplies using their own money. On average, teachers reported that, generally, these occurrences happened between "occasionally" to "often" ($M = 2.4$).

Administrators were asked a different set of questions about the extent to which their program had faced various circumstances that could impact their stress level (*1 = not at all* to *5 = very high degree*). Teacher turnover was the highest-rated stressor ($M = 2.63$), with teacher unhappiness with children's behaviors they view as challenging following closely ($M = 2.60$). The least common stressors among administrators were teacher unhappiness with professional development ($M = 1.69$), and unfavorable changes in program income or expenses ($M = 1.91$). All items are shown in Figure 5.

Figure 5. Job stressors among administrators ($n = 35$)
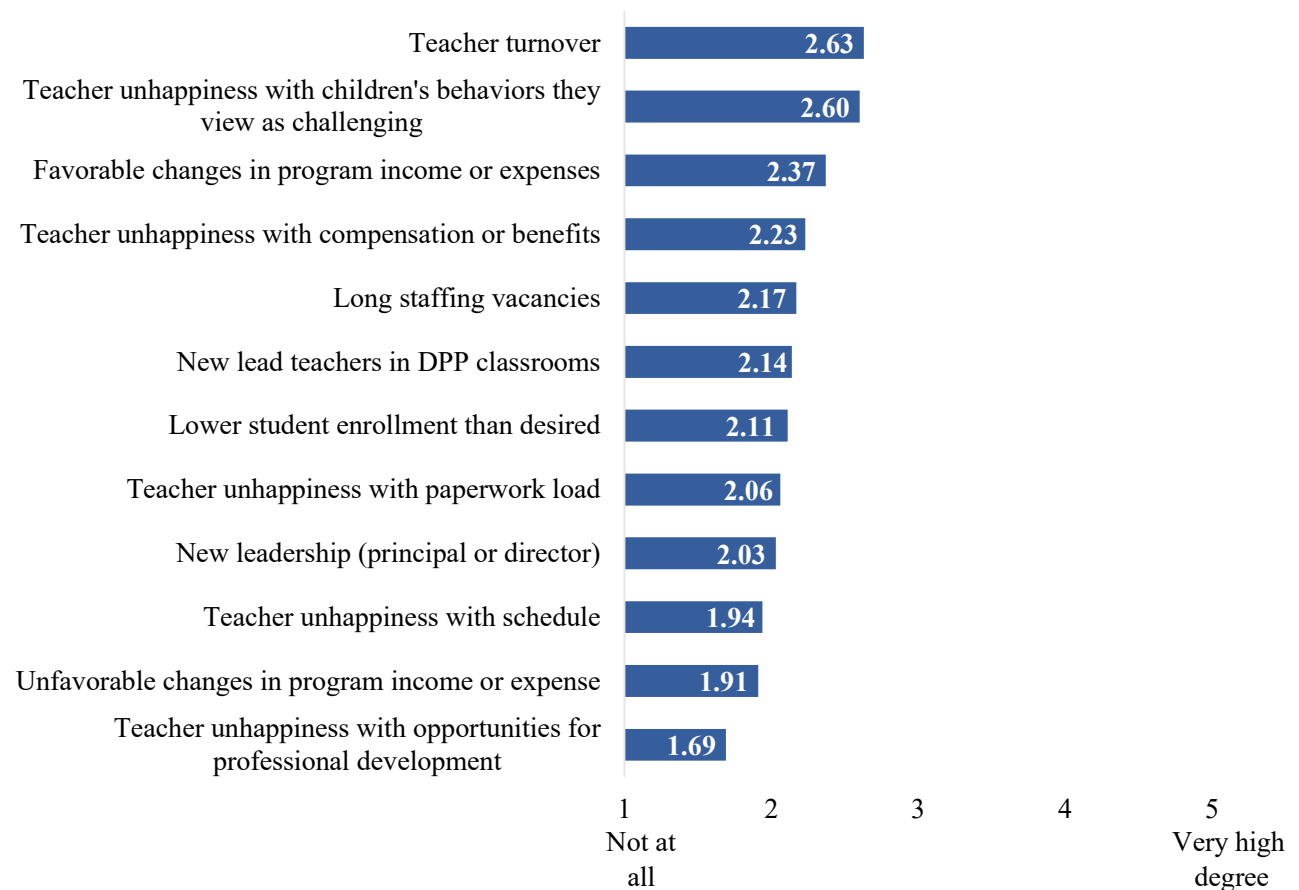
In interviews, a few of the most common stressors mentioned by providers were pay, staff shortages, classroom management and evaluations. Pay was a stressor for providers for various reasons including: not earning a living wage, believing it was a contributor to unhappiness among staff, and teacher turnover. One provider said, *"It's very hard to attract potential candidates or find qualified candidates within the field. And then also my staff, who I think are doing an amazing job, knowing that they feel underpaid… hurts."* Relatedly, staff shortages and turnover in general were major sources of stress for several providers and seemed to be a gateway to other stressors such as lack of coverage and planning time.

Classroom management was another frequently mentioned source of stress. Some felt that classroom management and staff shortages were also related saying, "*We have some really, really tough kiddos in this class. It was a tough transition, especially in the beginning of the year. There was a lot of changes last year. They couldn't keep teachers in the classroom and just a lot of behaviors and we're still seeing a lot of that leftover, we're still trying to help them navigate through that.*"

Evaluations were mentioned as being stressful by many providers. A few specifically mentioned evaluations such as TS Gold, LEAP and CLASS®. As one provider explained, *"They're very stressful, to be perfectly honest. Teachers don't love it from the standpoint of they're listening to everything you say, and then you second-guess what you say. You're trying to do your job while you're being graded, and that's really stressful for everybody, anybody."*

What predicts job stress?

To explore potential predictors of respondents' level of job stress, we conducted a hierarchical linear regression model. The following predictors were included: site type (DPS vs. community), tenure (0-2 years vs. all other), education (less than a BA vs. all other), age of children served (4-year-olds vs. 3-year-olds and mixed ages), self-care, school climate, pay per hour, number of benefits, whether or not work a second job, and race/ethnicity (white vs. all other).

> **Significant predictors of *lower* job stress**
>
> - Working in 4-year-old classrooms
> - Greater self-care
> - More positive school climate

Significant predictors of job stress were: age group served[33], self-care[34] and school climate[35]; that is, teachers who worked in classrooms with 4-year-olds, who had higher self-care scores, and a more positive school climate, were less stressed.

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[33] $B = -0.19$, $p = .01$
[34] $B = -0.25$, $p = .004$
[35] $B = -0.22$, $p < .001$

Self-care

Teachers and administrators reported their engagement in eight professional self-care practices[36] on a scale of *1 = never* to *5 = very often* (α = .62). On average, overall ratings fell between "sometimes" and "often" (*M* = 3.43). There were statistically significant differences between teacher and administrator ratings of acknowledging success at work (*M* = 3.69, *M* = 3.36 respectively) and problem solving when challenges arise at work (*M* = 4.15, *M* = 4.42 respectively)[37] (Figure 10). Thus, teachers acknowledge successes slightly more often, while administrators conduct more problem-solving.

Seemingly, the most difficult practice for both groups to fit in was taking small breaks throughout the workday (*M* = 2.34, *SD* = .976). One interviewee mentioned that lack of breaks was a stressor to them and that it was difficult to get breaks in – especially due to lack of coverage. One provider mentioned that it is difficult *"Not having coverage [is difficult]. Like, just time to go to the restroom. Since it's licensing you are not able to go to the restroom or you have to wait until an adult comes in that is certified to be in the classroom."*

Figure 5. Frequency of engagement in professional self-care practices (*n* = 302-304)

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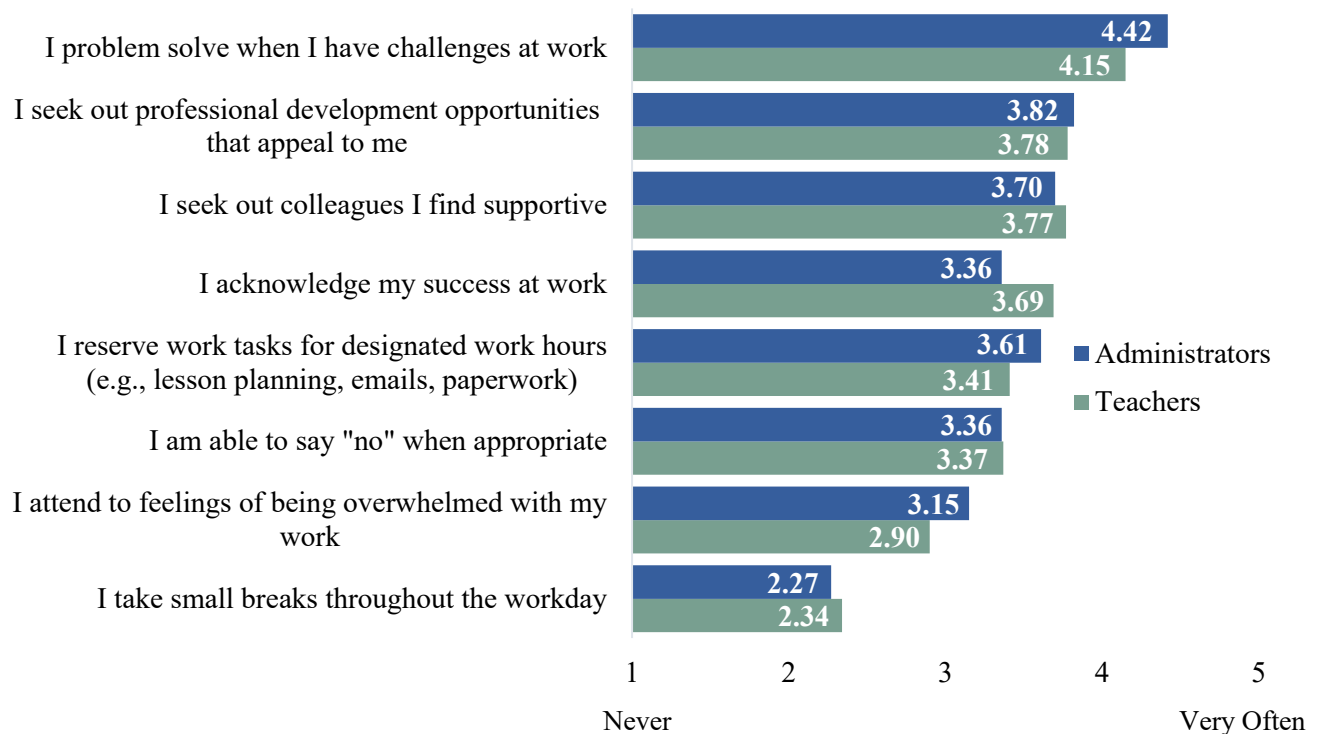
[36] Lee, J. J., Miller, S. E., & Bride, B. E. (2016). *Self-Care Practices Scale (SCPS)*.
[37] Acknowledging success at work by role: $t(302) = -1.947$, $p = .052$; problem solving at work by role: $t(302) = 2.196$, $p = .029$

Health-related Quality of Life

Generally, health-related quality of life[38] was reported as being between good and fair ($1 =$ *excellent* to $5 = poor$) ($M = 3.51$). Notably, however, ten percent of providers rated their health as *poor* or *fair*.

Providers were also asked about their physical and mental health in the 30 days prior to taking the survey. On average, providers reported their physical health as being "not good" on four of the past 30 days. Poor mental health days were slightly more common, with an average of five days. Providers reported that in the 30 days prior to taking the survey, poor physical or mental health kept them from doing their usual physical activities, such as self-care, work, or recreation an average of three days.

Consistent with the Pennsylvania Head Start Study[39], we defined "frequently unhealthy days" as the prevalence of poor mental or physical health during 14 days or more per month. Among DPP providers, 9 percent experienced frequent physically unhealthy days and 13 percent experienced frequent mentally unhealthy days. These estimates are slightly lower than estimates from the Pennsylvania Head Start Study, and higher than national averages.

> *"I use resources -- whether it's my teammates, or if it's reaching out to our early ed. partners, and getting support from them, or if it's going within the building to our administration, or our coaching staff, and whoever it may be."*
>
> *-DPP Provider*

Workplace Climate

Additionally, teachers were asked about their workplace climate[40]. Overall school climate was rated fairly high ($M = 4.05$) indicating collegiality. The teacher professionalism subscale ($\alpha = .90$) also yielded a fairly high rating ($M = 4.20$), while the collegial leadership subscale ($\alpha = .95$) rating was slightly lower ($M = 3.90$).

Within DPS respondents, there was a statistically significant difference in ratings for the teacher professionalism subscale between lead teachers ($M = 4.34$) and assistant teachers ($M = 4.07$). DPS leads reported significantly higher ratings than DPS assistants on two specific items from this subscale: cooperation among teachers ($M = 4.42$, $M = 4.00$), and teachers use of professional judgement ($M = 4.25$, $M = 3.90$).[41]

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[38] Centers for Disease Control and Prevention. Measuring Healthy Days. Atlanta, Georgia: CDC, November 2000.
[39] Whitaker, R. C., Becker, B. D., Herman, A. N., & Gooze, R. A. (2013). The Physical and Mental Health of Head Start Staff: The Pennsylvania Head Start Staff Wellness Survey, 2012. *Preventing chronic disease, 10*.
[40] Tschannen-Moran, M., Parish, J., & Dipaola, M. (2006). School climate: The interplay between interpersonal relationships and student achievement. *Journal of School Leadership, 16*(4), 386-415.
[41] Teacher professionalism subscale by DPS role: $t(180) = 2.606$, $p = .010$; teacher interactions by DPS role: $t(178) = 3.363$, $p = .001$; teacher professional judgement by DPS role: $t(180) = 2.803$, $p = .006$

Financial Well-being

Financial well-being was captured in several ways, including employer-sponsored benefits, pay, financial strain, utilization of public assistance, and holding multiple jobs.

Employer-Sponsored Benefits

Overall, the three benefits most commonly provided benefits by schools or centers that participate in DPP were paid sick days (90 percent), health insurance (86 percent), and paid professional development (79 percent).
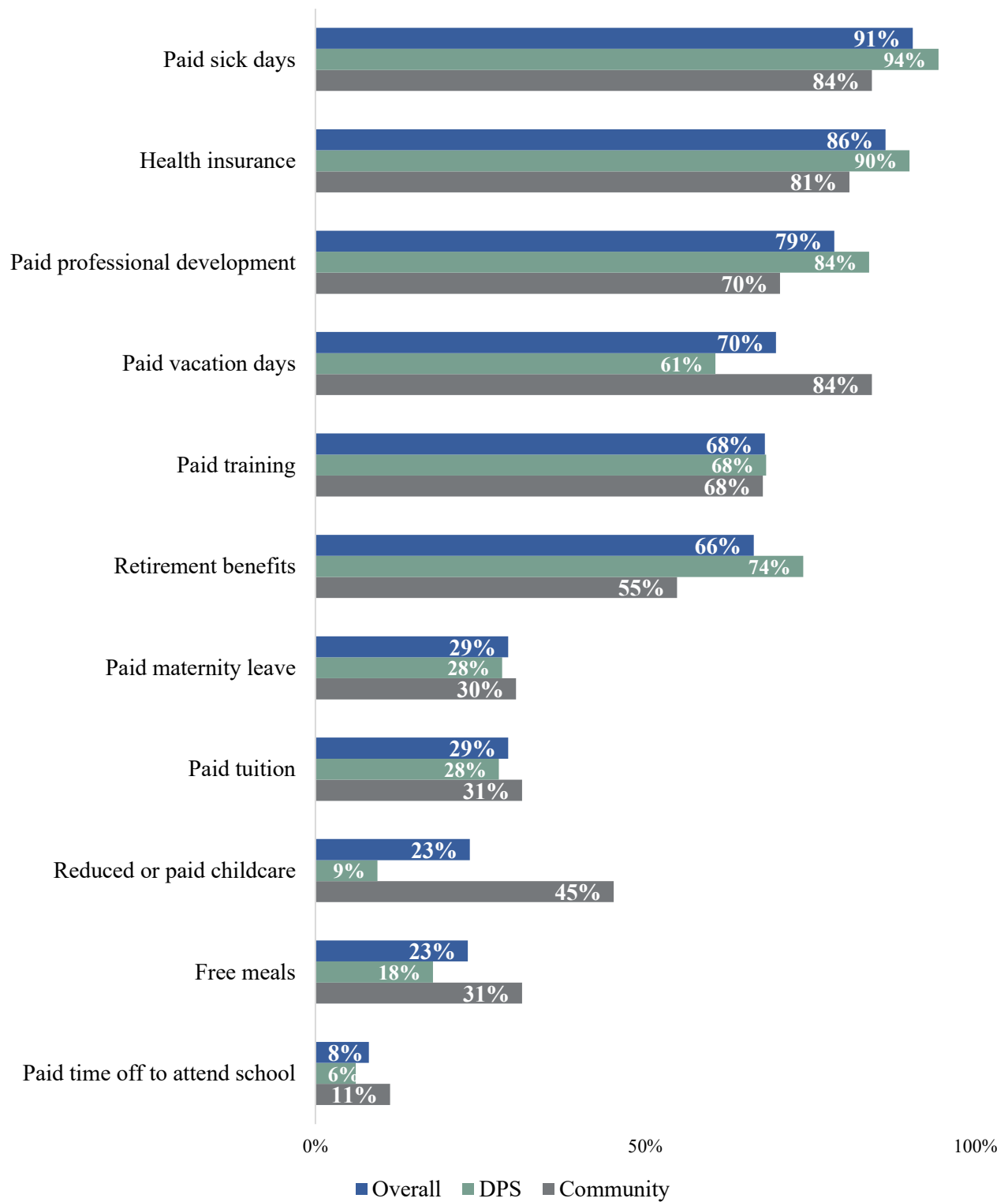
For DPS schools, the top three benefits provided were the same as previously mentioned; the three benefits most commonly available to community providers were paid sick days (84 percent), paid vacation (84 percent), and health insurance (81 percent).
Some differences emerged in benefits provided to DPS providers and community-based providers. Benefits offered to more DPS providers than to community providers included: paid sick days (94 percent vs. 84 percent, respectively), paid days to attend professional meetings or training (84 percent vs. 70 percent), retirement benefits (74 percent vs. 55 percent), and health insurance (90 percent vs. 81 percent). Benefits that more *community* providers received in comparison to DPS providers included paid vacation days (84 percent vs. 61 percent, respectively), reduced or paid child care (45 percent vs. 9 percent), and free meals (31 percent vs. 18 percent).[42]

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[42] Paid vacation days by site: $t(293) = 4.473$, $p = .000$; paid sick days by site: $t(293) = -2.917$, $p = .004$; paid days to attend professional meetings or training by site: $t(293) = -2.777$, $p = .006$; retirement benefits by site: $t(293) = -3.446$, $p = .001$; health insurance by site: $t(293) = -2.246$, $p = .025$; reduced or paid child care by site: $t(293) = 7.743$, $p = .000$; free meals: $t(293) = 2.715$, $p = .007$

Figure 6. Benefits received by site (*n* = 115 – 295)

Benefit	Overall	DPS	Community
Paid sick days	91%	94%	84%
Health insurance	86%	90%	81%
Paid professional development	79%	84%	70%
Paid vacation days	70%	61%	84%
Paid training	68%	68%	68%
Retirement benefits	66%	74%	55%
Paid maternity leave	29%	28%	30%
Paid tuition	29%	28%	31%
Reduced or paid childcare	23%	9%	45%
Free meals	23%	18%	31%
Paid time off to attend school	8%	6%	11%

Pay

Survey participants reported pay in the metric of their choosing (annual, monthly, or hourly), in addition to how many months they work per year and how many hours they work per week. This information was used to create a common pay metric.[43]

Results show large pay disparities by job role and setting (see Table 2). Of those surveyed, DPS lead teachers make the most, and community-based assistant teachers make the least. It is notable that DPS teachers make 64% more than community preschool lead teachers, and 47% more than leaders of community preschools, on average.

> **Teaching assistants from community preschools make less than half the salary of DPS lead teachers, on average.**

Table 2. Pay by job role and setting

| Job Title & Setting	Median Annual Pay	Median Hourly Pay
DPS Lead Teachers ($n = 83$)	$59,000	$28.37
Community Administrators ($n = 26$)	$40,000	$19.24
Community Lead Teachers ($n = 62$)	$36,015	$17.32
DPS Paraprofessionals ($n = 74$)	$28,080	$13.50
Community Assistants ($n = 12$)	$25,615	$12.32

What predicts DPP providers' hourly pay?

To understand the characteristics associated with higher pay among the DPP workforce, we conducted a hierarchical linear regression model with the following predictors: type of site (DPS vs. community), tenure (0-2 years vs. all other), education level (less than a bachelor's degree, bachelor's degree, more than a bachelor's degree), race (white vs. all other), and job role (assistant teacher, lead teacher, administrator).

Significant predictors of *higher pay* were working at a DPS site and/or having a master's degree or higher. Predictors of *lower pay* were job tenure of two years or less, and/or being employed as an assistant teacher (vs. a lead teacher) (Figure 5).

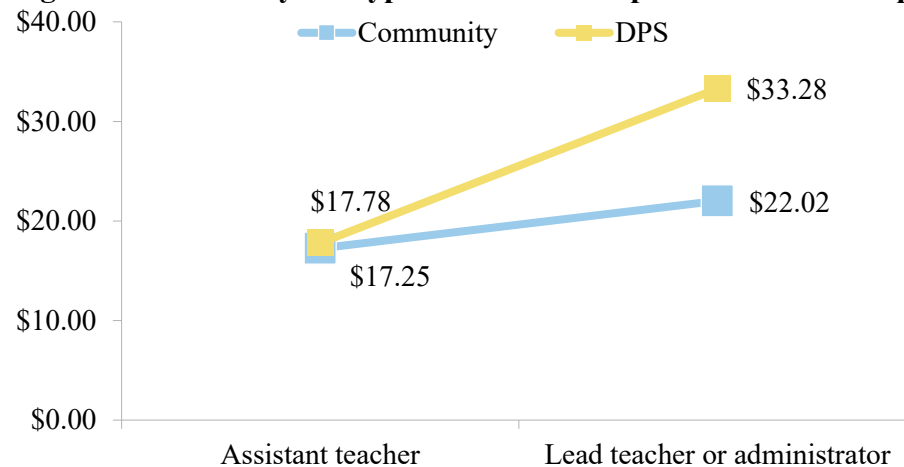[43] For these calculations, hours worked per week were capped at 40 hours

Figure 7. Significant predictors of hourly pay

DPS**
+ $9.78

Master's
degree or
higher*
+ $4.00

Tenure <
2 years**
-2.90

Assistant
teacher**
-$12.63
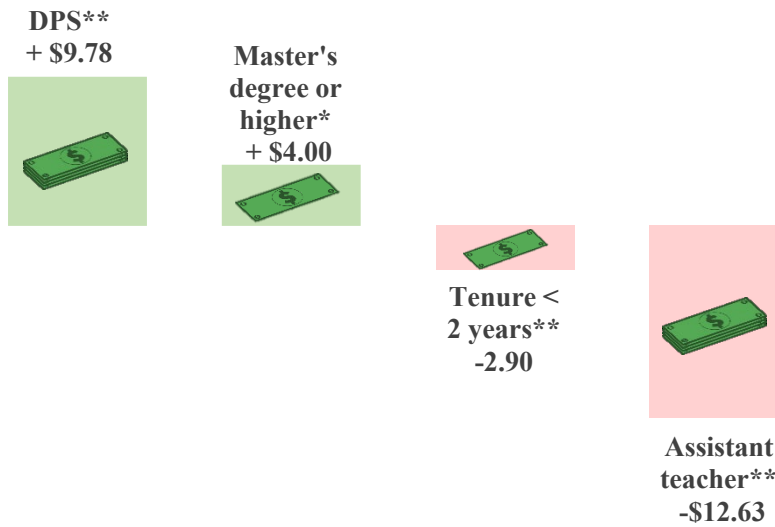
*p < .05; ** p < .01

A job role by site type interaction was also tested to examine whether the relationship between job role and pay differed based on whether staff work in DPS or community sites. Note, for this analysis, lead teacher and administrator roles were combined. This interaction was statistically significant;[44] that is, the association between job role and pay matters more for staff in DPS schools than staff in community sites (Figure 6).

Figure 8. Job role by site type interaction for predicted values of pay

$40.00

—■—Community   —■—DPS

$33.28

$30.00

$17.78

$20.00

$22.02

$17.25

$10.00

$0.00

Assistant teacher   Lead teacher or administrator

_____

[44] B = $10.73, p < .001

Financial Strain[45]
When asked if they had any difficulty paying their bills in the past 12-months, providers reported between having some difficulty, on average, ($M = 2.82$) from *1 = a great deal of difficulty* to *4 = no difficulty at all*. Although there were no significant differences in ratings or financial strain between administrators and teachers ($M = 2.87$, $M = 2.81$), or DPS providers and community providers ($M = 2.84$, $M = 2.79$), there was a significant difference in ratings of financial strain between DPS lead teachers and DPS assistants ($M = 3.22$, $M = 2.38$), such that DPS assistants experienced significantly more financial strain than DPS lead teachers.[46]

Public Assistance
Survey participants were asked to identify forms of assistance they received (shown in Figure 9). Results indicate that 81 respondents (25 percent) received at least one form of assistance, and among these respondents, providers received an average of two forms of assistance. The most commonly utilized forms of assistance were Medicaid or Medicare (for themselves), free or reduced lunch for their children, and Medicaid or subsidized health insurance (for their children).

Figure 9. Assistance received (*n* = 81)
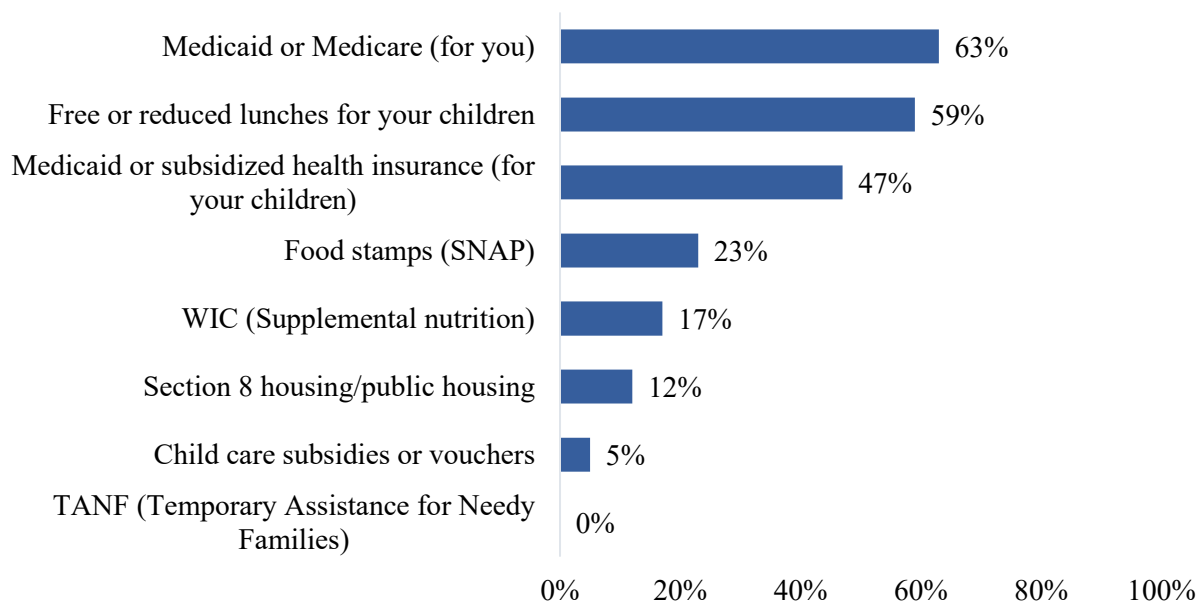
By job role, assistant teachers in both DPS and community sites reported the most utilization of public assistance. Specifically, 61 percent of respondents who were assistants in community sites and 49 percent of respondents who were DPS assistants report utilizing public assistance.

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[45] Item from Conger, R. D., & Elder Jr, G. H. (1994). Families in Troubled Times: Adapting to Change in Rural America. Social Institutions and Social Change. Hawthorne, NY: Aldine de Gruyter.
[46] Financial strain by role: $t(175) = 6.117$, $p = .000$

Comparatively, these estimates were 19 percent for lead teachers in community sites, 18 percent for administrators in community sites, and 9 percent for DPS lead teachers.

Working a Second Job
More than one-third of participants worked a second job to make ends meet. On average, they worked 14.7 hours per week at their second job. DPS assistants had the highest percentage of providers working a second job (50 percent). However, community assistants reported working more hours at a second job than any other group ($M = 25.25$).

Recommendations

Support Providers' Social and Emotional Well-Being. Teachers' well-being, specifically in terms of their self-care practices and job stress, predicted their use of developmentally appropriate practices with children. Put simply, teachers who can take care of themselves during the workday are more able to take care of the children in their classrooms. Unfortunately, on average, teachers and administrators reported rarely having the opportunity to take small breaks throughout the day. As shared during interviews, licensing requirements for classroom ratios and lack of available staff make it difficult for staff to use the restroom. Breaks throughout the workday can also deescalate stressful situations and allow staff to regain composure. To address this need, more staff are needed, particularly floaters, to step into classrooms to relieve teachers and allow for necessary breaks.

Another component of self-care that providers had difficulty fitting into their workday was attending to feelings of being overwhelmed with work. Attending to emotions (e.g., practicing mindful awareness) is an important part of self-awareness and self-regulation. In other words, teachers who recognize and acknowledge that they are feeling overwhelmed can employ strategies for calming down more readily than teachers who do not attend to those feelings. Consistently, among DPP teachers, self-care related to job stress, such that teachers who used more self-care strategies had lower work stress. Mindfulness training may offer an opportunity to reduce providers' stress and build resilience. Notably, teaching in a 3-year-old or mixed age classroom predicted higher job stress (as compared to 4-year-old classrooms). As such, it may be particularly beneficial to offer more support to staff in these classrooms.

Contextual factors must also be addressed to reduce stress. In fact, teachers who worked in more supportive environments, defined by cooperation among staff and support from administrators, reported less stress. Common stressors identified in the present study included staff turnover (and subsequent staff shortages), low pay, and children exhibiting challenging behaviors. Many of these stressors are interconnected, such that low pay may contribute to staff turnover and hiring challenges; staff shortages and instability in the classroom may exacerbate children's challenging behaviors. Furthermore, without change, this cycle continues. Systemic change is needed to build and maintain a well-qualified, well-supported workforce. More professional development opportunities, including coaching and mental health consultation, could be offered to address classroom management strategies and more intensive behavioral support for children.

Support Providers' Financial Well-Being, including Parity across Job Roles and Settings. Providers working in DPP preschools are compensated differently based on their job roles and settings. On average, DPS teachers are paid 64% more than community preschool lead teachers, and 47% more than leaders of community preschools. There are further differences in the provision of important employer-sponsored benefits, with community providers not receiving

sick time, retirement benefits, and health insurance as consistently as DPS teachers. The benefits community providers receive at higher rates (e.g., free meals and reduced childcare) likely do not have the same long-term financial impact as the benefits they miss out on (e.g., retirement benefits and health insurance). Furthermore, across both community and DPS settings, assistant teachers and paraprofessionals reported making median wages that are barely above Denver's current minimum wage. Consistently, these providers reported the most financial strain and the greatest reliance on public assistance. DPP providers, across settings and job roles, are undoubtedly doing extremely important work caring for and educating the next generation; they deserve to be fairly compensated, which will require creative solutions and systemic change.

Appendix

Table A1. Survey Respondent Demographics

	n	*%*
Type of Preschool	318	DPS: 58.5% Community: 41.5%
Job Title	318	Administrator (Program Owner, Director, Assistant Director, Family Child Care Provider, or Pre-K/EC Administrator): 11.9% Lead Teacher or Teacher: 56.9% Assistant Teacher, Aide, Para-Professional, or Substitute Teacher: 31.1%
Job Titles Among DPS Sites		Lead Teacher or Teacher: 53.8% Assistant Teacher, Aide, Para-Professional, or Substitute Teacher: 46.2%
Job Titles Among Community Sites	132	Administrator (Program Owner, Director, Assistant Director, Family Child Care Provider, or Pre-K/EC Administrator): 28.8% Lead Teacher or Teacher: 61.4% Assistant Teacher, Aide, Para-Professional, or Substitute Teacher: 9.8%
Years in Current Position	318	Less than 1 year: 16.4% 1 to less than 3 years: 17.3% 3 to less than 5 years: 22.0% 5 to less than 10 years: 21.3% 10 or more years: 23.0%
Race/Ethnicity	294	White: 49% Hispanic, Latino, or Spanish origin: 35.4% Black or African-American: 10.5% Other: 5.1%
Gender	296	Female: 94.6% Male, Non-binary/third gender, Prefer to Self-Describe: 5.4%
Age	282	Range: 19-72 Mean: 41.2 SD: 12.0