

VPI+ Comprehensive Evaluation Annual Report

Year 1 (2015–2016)

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Prepared for:

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Early Childhood
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Executive Summary

In January 2015, the Virginia Department of Education (VDOE) in the Commonwealth of Virginia was awarded a federal Preschool Development Grant (PDG) to expand high-quality preschool programs for at-risk four-year-olds in 11 of Virginia's 132 school divisions that ranked among the highest in need based on key indicators.¹ Since the PDG grant augments Virginia's existing state-funded Virginia Preschool Initiative (VPI), Virginia named the work being carried out through its PDG grant the Virginia Preschool Initiative Plus (VPI+).

To measure impact and support program improvement, the Virginia Department of Education (VDOE) contracted with SRI International (SRI) in late August 2015 to conduct a comprehensive evaluation of VPI+, including a formative evaluation of VPI+ implementation, a summative evaluation of VPI+ impact on children's school readiness and later academic outcomes, and a cost analysis to determine investments needed for desired outcomes.

The PDG funds support two types of preschool classrooms in high-need communities within 11 school divisions across the state: (1) VPI+ classrooms (i.e., newly-opened classrooms that implement all of the VPI+ grant requirements) and (2) VPI Improved classrooms (i.e., existing state-funded classrooms that enhance their quality by implementing at least one of five program quality enhancements). Due to budgetary constraints, VDOE decided to focus the external evaluation on only VPI+ classroom implementation and child outcomes (not VPI Improved classrooms), given VPI+ classrooms will be receiving the full treatment of initiative supports. Therefore, this Year 1 report presents findings on only VPI+ classrooms and children.

Evaluation Methods

SRI used a variety of methods and sources to learn about VPI+ implementation during the first year of the grant, including analysis of extant data on student demographic and enrollment characteristics, teacher and program characteristics, and classroom and teacher quality observations; logs on local coaching and professional development activities; summaries and documentation of technical assistance and training sessions provided by state partners to VPI+ coordinators, coaches, and family engagement coordinators; interviews and surveys with school division VPI+ coordinators; surveys of VPI+ teachers; and direct summative assessments and

¹ School divisions selected to participate in VPI+ were ranked in the top five on one or more of four indicators: percentage of students eligible for free and reduced price lunch, number of Title I schools, percentage of entering kindergarten children not reaching benchmark standards on literacy screening, and number of at-risk unserved four-year-olds.

teacher-completed checklists to measure outcomes for VPI+ children in the areas of literacy, cognitive development (math and cognitive flexibility), approaches to learning (task orientation), social emotional development (self-regulation, peer social skills, and behavioral control), and physical and motor development (health status and fine and gross motor skill development).

Enrollment and Access

Because of VPI+, the number of high-quality slots available for at-risk four-year-olds in a preschool setting across the Commonwealth has increased to include 1,611 slots in 66 newly-opened high-quality preschool classrooms as well as 44 existing classrooms with blended funding that were brought up to VPI+ standards, for a total of 110 VPI+ classrooms for Year 1 of the grant (2015–16).

Enrollment

- VPI+ children attended one of the 66 new VPI+ classrooms in the 11 participating school divisions or one of the 44 existing blended classrooms in Henrico County Public Schools (HCPS), for a total of 110 new or blended VPI+ classrooms.
- By December 2015, VPI+ had enrolled 1,230 VPI+ children. HCPS served an additional 389 VPI Improved children in their blended classrooms. Thus, a total of 1,619 children were enrolled in new or blended VPI+ classrooms in fall 2015.
- By March 2016, VPI+ had 1,234 VPI+ children enrolled. HCPS served an additional 377 VPI Improved children in their blended classrooms. Thus, a total of 1,611 children attended the 110 new or blended VPI+ classrooms in the spring.
- When HCPS's VPI Improved children are included, 1,551 children were enrolled in new or blended VPI+ classrooms in both fall 2015 and spring 2016 based on roster exports. Student demographics for the 1,551 children include:
 - Approximately the same percentage of males and females attended VPI+ programs.
 - 7% of the children were identified with a disability and/or received an Individualized Education Program (IEP).
 - 5% of children were rated by their teachers as having fair or poor health.
 - More than half of the children (55%) were identified as Black or African American; about one-fourth (23%) were Hispanic and 14% were White.
 - More than half of the children (58%) were from households at or below 100% of the Federal Poverty Level (FPL). About one-fourth of children were from

households between 131% and 200% and the remaining 18% were from households between 101% and 130% of the FPL.

- Nearly three-fourths of the children spoke English at home. Nearly one-fifth of children spoke Spanish at home (18%), while the remaining children spoke Arabic (3%) or another language (5%).

Attendance

- Children who were enrolled in VPI+ in the fall and spring and for whom there were attendance data ($n = 1,497$) attended, on average, 158 school days out of an expected 180 days.
- About half (52%) of VPI+ children who were enrolled in fall and spring attended more than 90% of the 180 school days. The vast majority (85%) of VPI+ children attended 80% or more of the 180 school days.
- Not surprisingly, children who were in fair or poor health were more likely to miss more than 20% of the days that VPI+ was offered.

Attrition

- Of 1,619 children enrolled in new or blended VPI+ classrooms in fall 2015, 80 children left the VPI+ program after the fall assessment period, resulting in a 5% attrition rate.
- Children who spoke English at home or were from lower-income families (i.e., 100% or less of FPL) were more likely to have left the VPI+ program.

Program Implementation and Quality

All VPI+ classrooms are expected to include certain implementation components consistent with a high-quality preschool program as set forth by the Preschool Development Grant (PDG), including a highly educated work force with a deep understanding of child development, children's and families' access to comprehensive services, use of an evidence-based curriculum, use of formative assessment results to inform instruction, and engagement of families in children's learning and progress.

Program characteristics

- **Structural program characteristics.** All VPI+ programs offered full-day schedules, providing 5.5 hours or more of instructional time each day.² According to data collected in December 2015, nearly all VPI+ classrooms (98%) met the requirement of having 18

² Information on hours of instruction was reported by VDOE to SRI.

or fewer children and averaged 17.3 children. The average child-to-instructional-staff ratio was 8.5 children to 1 teacher or assistant teacher, meeting the PDG criterion of no more than 10 children to 1 instructor.

- **Teacher characteristics.** All VPI+ teachers held a bachelor's degree and nearly half (47%) held a master's degree, and all teachers had an elementary teaching license endorsement that included preschool.³ The majority of VPI+ teachers had some previous experience teaching preschool (68%), but many were relatively new to teaching preschool. Among those who were teaching preschool for the first time in 2015–16, more than half (56%) had been teachers in elementary schools the previous year.
- **Curriculum and instruction.** The majority of VPI+ teachers (68%) across divisions were implementing their program's curriculum for the first time. Despite many VPI+ teachers having to master a new curriculum, most VPI+ teachers reported on the teacher survey feeling prepared to use their curriculum. Almost all VPI+ teachers (91%) reported that children in their classes usually worked daily on lessons or projects involving reading and language arts, and these activities typically consumed more instruction time than activities in other content areas. Most VPI+ teachers also reported that their children participated daily in projects or lessons focused on music (82% of teachers), dance and movement (78%), mathematics (71%), and art (69%).
- **Formative assessment use.** Despite challenges early in implementation, a large majority of VPI+ teachers strongly or somewhat strongly agreed that they felt confident collecting data using the *GOLD*[™] formative assessment (90%), and interpreting *GOLD*[™] results (92%). The majority of VPI+ teachers also agreed that *GOLD*[™] was very or moderately useful for informing curricular and lesson planning (76%), individualizing instruction for students (70%), and evaluating the effectiveness of their practice (68%).
- **Family engagement in learning.** About a third of VPI+ teachers found a lack of family engagement to be a great or moderate challenge to providing the best educational experience for their children. Teachers used a variety of strategies to communicate with and reach out to families.
- **Comprehensive services.** VPI+ Coordinators reported that large majorities of children enrolled in VPI+ programs and their families had readily available access to a wide range of local services and supports. Results of a survey conducted by VDOE of VPI+

³ One teacher is currently in the process of applying for her license.

parents in spring 2016 found that many families were accessing needed supports as a result of their participation in VPI+, including 68% of parents reporting that their child or other family members had received screenings (hearing, vision, speech, medical, or dental checks), more than 40% reporting that their child or family members received medical or dental treatment, and about 15% of parents reporting that their child or family got connected to health insurance as a result of their VPI+ experience.

Program quality ratings. 100% of the VPI+ program sites or schools achieved a Virginia Quality Rating and Improvement System (QRIS) rating of Level 3 or higher.

- On average, VPI+ classrooms were rated as moderately high in emotional support and classroom organization, and they were rated as slightly low on instructional support on the Classroom Assessment Scoring System (CLASS[®]).
- Overall, VPI+ program sites were rated as “good” when averaged across four Early Childhood Environment Rating Scale-Revised (ECERS-R) dimensions included in Virginia’s QRIS. VPI+ classrooms met the threshold of Level 4 or higher on the dimensions of Language-Reasoning and Interaction, but were slightly below that threshold on the dimensions of Activities and Program Structure.

Professional Development and Technical Assistance

VPI+ enabled a network of state agencies and partners to train and support local VPI+ leaders, such as division coordinators, coaches, and family engagement coordinators, as they took on new roles and responsibilities. It also provided professional development to VPI+ classroom teachers as they worked to establish high-quality preschool programming for children.

Training and technical assistance for VPI+ coordinators, coaches, and family engagement coordinators

- VDOE provided technical assistance to VPI+ coordinators, coaches, and family engagement coordinators on all components of grant implementation.
- Virginia Early Childhood Foundation (VECF) provided training on use of Virginia’s QRIS, including the CLASS[®] and the ECERS-R to guide program improvement efforts.
- The Center for Advanced Study of Teaching and Learning (CASTL) at the University of Virginia provided coach training and support and technical assistance to school division leaders on developing continuous improvement plans, improving teacher practices, and selecting coaching models.

- Other state partners such as the Virginia Department of Social Services, Virginia Department of Health, VDOE's Training and Technical Assistance Center, Virginia's Early Childhood Special Education Network, other centers at the University of Virginia, Virginia Association for Supervision and Curriculum Development, and Virginia Cross-Sector Professional Development Central Regional Consortium also conducted webinars and trainings.

Professional development and coaching for VPI+ teachers

- **Training on curriculum and instruction.** All VPI+ teachers using *The Creative Curriculum*[®] reported on the teacher survey receiving training on its use, and 72% of teachers using other curricula report receiving training on their curriculum. On average, VPI+ teachers who attended training for *The Creative Curriculum*[®] received twice as many hours of training (14 hours) as teachers using another type of curriculum (7 hours). The majority of VPI+ teachers, regardless of curriculum, perceived the training to be moderately or very useful.
- **Training on formative assessment.** Nearly all VPI+ teachers (98%) reported on the teacher survey having received professional development (including in-person training sessions, online modules, webinars, and coaching) on *GOLD*[™]. The amount of professional development teachers received on *GOLD*[™] varied dramatically with some teachers receiving more than 16 hours of training and others receiving fewer than 4 hours.
- **Coaching.** In Year 1, 14 VPI+ coaches supported 115⁴ VPI+ teachers. Based on data from the online log of the services coaches delivered to teaching staff:
 - Coaches served 75% of VPI+ teachers in the fall and 83% of VPI+ teachers in the spring.
 - Coaches had slightly more contacts per month with VPI+ teachers in the fall than in the spring (2.9 versus 2.5 contacts) and spent slightly more time per month with VPI+ teachers in the fall than in spring (4 versus 3.6 hours). Coaches most frequently worked with teachers in their classrooms while students were present (54% of fall contacts and 44% of spring contacts), followed by meeting teachers before or after class when students were not present (26% and 34%). Group trainings occurred less frequently (20% of fall contacts and 22% of spring

⁴ While there were 110 VPI+ classrooms, five classrooms had job-sharing arrangements.

contacts). In both fall and spring, coaches spent about an hour with teachers during in-class coaching sessions and slightly less time in sessions before or after school. Group trainings, in contrast, lasted about three hours on average in both the fall and spring.

- Coaches used a variety of strategies. Observation was the most frequently used strategy, occurring in more than 40% of coaching contacts. More than a third of contacts included discussion, and more than a fourth included modeling.
- In most of their contacts (about 80%) with teachers, coaches addressed domain-specific topics (i.e., the five Essential Domains of School Readiness, National Research Council 2008). About half of coaching sessions included language and literacy, which was the most frequently addressed domain. About 40% of sessions included a focus on teacher-child interactions, and close to a third of coaching contacts addressed supportive environments.
- A vast majority of teachers also strongly or somewhat strongly agreed that their coaches were available when they needed help and were knowledgeable about priority areas, and provided useful resources and practical suggestions for improving teaching. Fewer, but still a majority, of VPI+ teachers strongly or somewhat strongly agreed that coaching during the initial year of VPI+ implementation had changed their teaching practices.

Child Outcomes

Across all school readiness measures, VPI+ children's scores increased significantly from fall to spring, although gains in some areas were small. These data suggest the expansion efforts in the Commonwealth are off to a good start which is especially promising given children were assessed later in the fall than intended, which only allowed for a short window of program implementation to affect positive outcomes. Most subgroups also demonstrated significant growth on all measures with very few exceptions. There also were significant subgroup differences where children with certain characteristics or risk factors showed greater gains than their counterparts without those characteristics or risk factors. Key findings related to subgroups included the following:

- Dual language learner (DLL) children started significantly lower but made greater gains on five of the six literacy scales and the early math assessment.
- This same pattern was observed for children whose households were at or below 100% of the FPL on upper-case alphabet recognition and name writing tasks on which they

started with significantly lower scores but made greater gains compared with children from 101 to 200% FPL households.

- For the measure of approaches to learning, the task orientation scale on the Teacher-Child Rating Scale T-CRS 2.1, children having an IEP started with significantly lower scores, but made greater gains than children who did not have an IEP. There were no significant differences for children in the IEP and non-IEP subgroups on behavior control and social skills.
- For the measures of social-emotional development, DLL children started significantly higher on behavior control on the T-CRS 2.1 and made greater gains than non-DLL children. There were no significant differences for DLL and non-DLL children on social skills.
- Interestingly, there was no relationship between dosage (defined as attending 80% of the VPI+ school days) and the academic outcomes of literacy and math. However, higher attendance was related to gains on two of the social and emotional development measures and the approaches to learning measure.

Conclusion

This report contains findings across all 11 school divisions, 110 classrooms and teachers, and child demographic and outcomes for more than 1,600 participants in the first year. As the VPI+ Implementation Team and staff from the divisions review the report, special attention should be paid to how implementation can be strengthened across sites to ensure high-quality preschool programming is occurring. The VPI+ Implementation Team and staff from the divisions may want to carefully consider what additional resources, materials, and technical assistance is needed to meet the learning and teaching needs of all involved from coordinators to teachers to children and their families.

Next Steps

With support from state VPI+ partners (including CASTL, VECF, VDOE, and the evaluation team) the school divisions are now working on specific program improvement and professional development efforts using data from the QRIS, formative assessments, and summative assessments. State-level VPI+ leadership is working with school divisions around issues such as recruitment of eligible children, data collection and reporting, and fidelity of program implementation. School divisions are also launching Year 2 of the VPI+ program, including expansion of the program to more classrooms. During Year 2, the evaluation will collect and use formative program measures and summative child assessments, cost data, and administrative

and extant data (e.g., teacher and program characteristics, student characteristics, enrollment, attendance, and student disciplinary actions) from the school divisions to continue providing feedback to help improve instruction and program implementation. During Years 3 and 4 of the VPI+ program, the evaluation team will conduct a regression discontinuity study to examine program impacts. Finally, the evaluation will conduct a cost study to examine the costs and benefits related to achieving desired child outcomes.

1. Introduction

In January 2015, the Virginia Department of Education (VDOE) in the Commonwealth of Virginia was awarded a federal preschool expansion grant to improve quality in existing preschool classrooms and to expand access to high-quality preschool classrooms, referred to as the Virginia Preschool Initiative Plus (VPI+). Virginia is one of only 18 states awarded a U.S. Department of Education Preschool Development Grant (PDG). Virginia is using their PDG funds to increase access to high-quality preschool in 11 school divisions in high-need communities by expanding the number of slots available and by improving existing classrooms. (Virginia uses the term “division” rather than “district”.) These activities build on Virginia’s existing preschool program, Virginia Preschool Initiative (VPI). This report documents Year 1 implementation and impacts on child outcomes in VPI+ classrooms.

The PDG funds support two types of preschool classrooms in high-need communities within 11 school divisions across the state:

VPI+ classrooms: newly-opened VPI+ classrooms that implement all of the VPI+ grant requirements. Further, VPI+ classrooms receive the following supports:

- Developmentally appropriate evidence-based curriculum (*The Creative Curriculum*[®] or other reviewed curriculum) that focuses on the Essential Domains of School Readiness (National Research Council, 2008):
 - Language and literacy development;
 - Cognition and general knowledge (including early mathematics and early scientific development);
 - Approaches to learning (including the utilization of the arts);
 - Physical well-being and motor development (including adaptive skills); and
 - Social and emotional development.
- Teaching Strategies[®] GOLD[™] formative assessment system and training
- Ongoing program evaluation and monitoring and improvement support from the Virginia Quality Rating Improvement System (QRIS)
- Focused coaching and professional development (e.g., curriculum implementation connected to the five essential domains of school readiness)
- External program evaluation (formative and summative assessment reports to inform program improvements)

- On-site comprehensive services, such as vision and hearing screenings, mental health, nutrition, and adult education, and referrals to additional community-based services
- Family engagement coordinators to help with outreach to hard-to reach families and to connect families to services
- Significant additional resources (e.g., instructional technology for classrooms, curriculum support with training, classroom libraries and curriculum-based literacy materials, curriculum-based hands-on materials and learning center supplies)

In addition, classrooms within the VPI+ program must contain the following elements associated with high-quality preschool programs:

- High staff qualifications, including teachers with a bachelor's degree in Early Childhood Education or in any field with state-approved pathways and teaching assistants with appropriate credentials;
- Teachers must have an active Virginia teaching license with an elementary endorsement including PreK;
- Individualized accommodations and supports so all children can access/participate fully in learning tasks;
- Child-to-instructional staff ratios of no more than 9 to 1 and class sizes of no more than 18 children;
- Staff salaries comparable to salaries of K-12 teachers;
- Full day program; and
- Engagement of families as decision makers.

VPI Improved classrooms: existing state-funded classrooms that enhance their quality by implementing at least one of five program quality enhancements (i.e., raising private providers' teacher and/or assistant compensation to align with K–12 school division teachers, moving from a half-day program to a full-day program, reducing class size and student-teacher ratio, providing evidence-based professional development and/or coaching, and making comprehensive services available to children and their families).

In addition, Virginia is improving its preschool infrastructure. For example, Virginia is making improvements to its preschool data collection that feeds into the Virginia Longitudinal Data System (VLDS) to accommodate preschool program characteristics and child assessment data and has established a Cross-Organizational Data Team to collaborate on integration of

preschool data. The team members have established Restricted Use Data Agreements (RUDAs) to appropriately share various data among school divisions, agencies, and the evaluation team.

Virginia also created a cross-agency and cross-sector system at the state level to support coordinated implementation of VPI+ programs. The VPI+ Implementation Team consists of both public and private and state and local agency partners that can advise on and provide services for VPI+ and other at-risk children. The representatives and agencies assigned to the VPI+ Implementation Team have connections with a wide range of related programs and services that can support VPI+ children and their families. The VPI+ Implementation Team, or subcommittees of the team, have met three times for planning, technical assistance, and collaboration between school divisions and agency/organization partners.

To measure impact and support program improvement, VDOE contracted with SRI International (SRI) in late August 2015 to conduct a comprehensive evaluation of VPI+, including a formative evaluation of VPI+ implementation, a summative evaluation of VPI+ impact on children's school readiness and later academic outcomes, and a cost-benefit analysis to determine investments needed for desired outcomes. Due to budgetary constraints, VDOE decided to focus the external evaluation on only VPI+ classroom implementation and child outcomes (not VPI Improved classrooms), given VPI+ classrooms will be receiving the full treatment of initiative supports (e.g., approved curriculum, formative assessments, evaluation and monitoring from the QRIS, summative assessments, intensive coaching, increased funding for comprehensive services and family engagement, and increased availability of instructional materials, including technology). Therefore, this report presents findings on only VPI+ classrooms and children.

Evaluation Questions

The goal of VPI+ is to improve quality, access, and impact of services in high-needs communities throughout the state. Questions about access and quality are part of the formative evaluation questions. Access to high-quality preschool is expected to lead to positive child growth in the essential domains of school readiness in preschool. These positive preschool experiences and outcomes are expected to lead to greater school readiness in kindergarten, as well as increased attendance, decreased student retention, and a reduction in special education placement and other intensive reading intervention services. Thus, our evaluation questions for the first year of implementation (2015–2016) and the first cohort of participating children were as follows:

1. **Enrollment and access:** How many children are served in VPI+ new classrooms and what are their characteristics (e.g., race/ethnicity, home language, and special education status)? How much VPI+ preschool did children receive?
2. **Program quality:** To what extent are new VPI+ classrooms providing high-quality teacher and learning environments that address the five school readiness domains, use formative data to individualize instruction, and provide supports to the unique needs of learners? To what extent are the new VPI+ classrooms providing comprehensive services and increasing their engagement with families and communities?
3. **Technical assistance from state partners:** To what extent are VPI+ coaches and administrators receiving professional development (PD) from the Center for Advanced Study of Teaching and Learning (CASTL) at the University of Virginia and other state partners to support implementation of an evidence-based curriculum, formative assessments to inform instruction, family engagement strategies, effective teacher-child interactions, and other practices based on CASTL's needs assessment in new VPI+ classrooms? Do these supports meet the needs of division administrators and coaches?
4. **Local coaching and professional development:** To what extent are teachers of new VPI+ classrooms receiving local coaching and PD to support implementation of an evidence-based curriculum, formative assessments to inform instruction, family engagement strategies, effective teacher-child interactions, and other practices based on CASTL's needs assessment? Do these supports meet the needs of individual teachers?
5. **Child outcomes:** Do children who attend new VPI+ classrooms show increased school readiness skills during preschool (i.e., from fall to spring)? Do gains in skills vary by child characteristics (e.g., race/ethnicity, Dual Language Learners, income levels, special education status) or attendance?

Evaluation Methods

SRI used a variety of methods and sources to learn about VPI+ implementation during the first year of the grant (Exhibit 1).

Exhibit 1. Formative Evaluation Methods, by Question

	Extant data	Coaching logs	Technical assistance documentation	Observation of PD sessions	Division coordinator interview/ surveys	Teacher surveys	Summative assessments	Teacher checklists
1. Enrollment and access	★				★			
2. Program quality	★				★	★		
3. Technical assistance from state partners			★	★	★			
4. Local coaching and PD		★			★	★		
5. Student outcomes	★						★	★

SRI has used the following methods to collect evaluation data:

Extant and administrative data analysis: Each VPI+ school division provided data exports to the evaluation team on VPI+ and VPI improved enrollment and student demographics and teacher and program characteristics in the fall, updates to student enrollment in the spring, and data on cumulative attendance and attrition in the summer.

To measure classroom quality, SRI received data exports from the Virginia Early Childhood Foundation (VECF) with classroom observation data they collected on VPI+ classrooms in fall 2015 using the Classroom Assessment Scoring System® (CLASS®) and Early Childhood Environment Rating Scale-Revised (ECERS-R) through their involvement in a tiered Quality Rating and Improvement System (QRIS). The CLASS® and ECERS-R (described in more detail in Chapter 3) are observation measures of classroom quality and are collected as part of the PD supports offered to VPI+ classrooms through their involvement in the QRIS.

SRI also received data exports with literacy assessment data described below with the other summative child assessments.

Coaching logs: To learn about local coaching and professional development activities, local school division coaches used a log to track the coaching they delivered to teaching staff, including the content and intensity (hours) of coaching for individual VPI+ teachers. These logs are completed online throughout the school year.

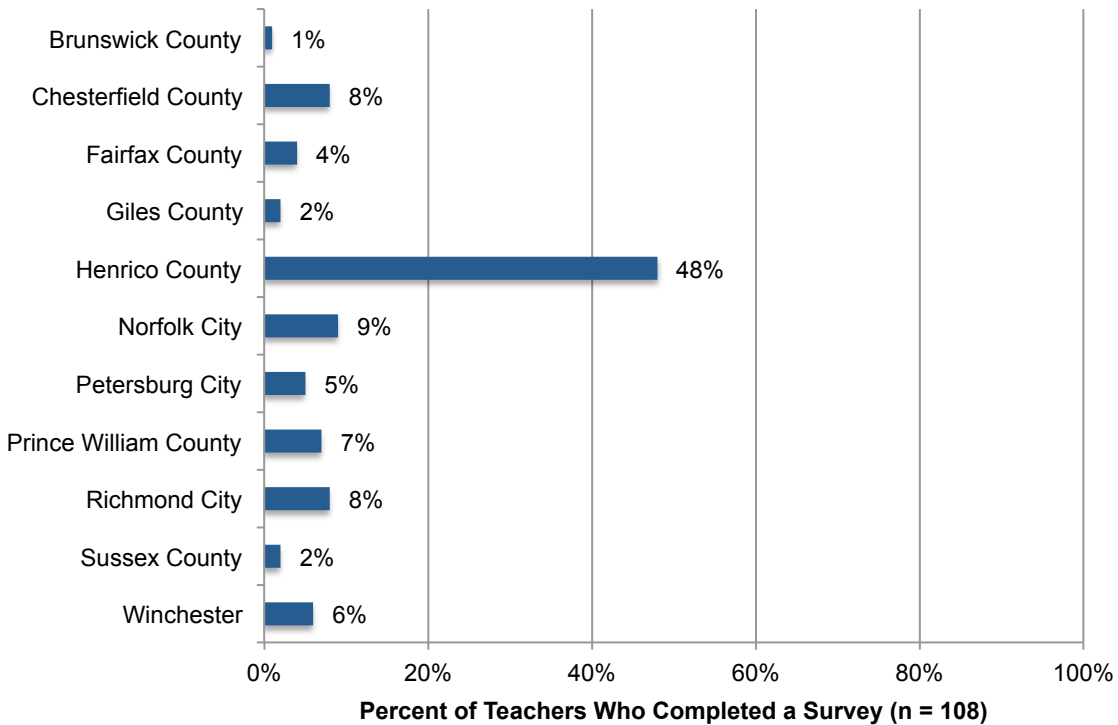
Documentation of technical assistance and observations of professional development sessions: VDOE, VECF, and CASTL provided technical assistance and support to VPI+ coordinators, coaches, and family engagement coordinators. To gather information about the type and intensity of technical assistance and support offered, SRI obtained summaries from VDOE and documentation from CASTL with the dates, hours, participant information (division, school/program, type of program, role), and the content of the technical assistance. The evaluation team has observed leadership and coach institutes led by CASTL to collect additional information about the content of technical assistance and the ways in which CASTL is supporting school divisions with the adoption of new curricula and formative assessments, coaching, use of data, and development of individual PD plans for their teachers and continuous quality improvement plans for programs.

Division VPI+ coordinator phone interviews and surveys: To gather basic program information, the evaluation team conducted semi-structured interviews and brief surveys with the division VPI+ coordinators responsible for coordinating each division's VPI+ classrooms in the fall and spring of 2015–2016. The interviews gathered information about each division's local experience implementing preschool programs; the coordinator's background, experiences, and qualifications; experiences with implementation of the curriculum and formative assessment; the characteristics of programs (e.g., full-day, size, staffing, staff qualifications, public or private); and program budget information. The phone interviews and surveys also focused on accomplishments; the role and influence of CASTL's needs assessment; the types and usefulness of the support local administrators received from CASTL around PD planning; local program improvement activities; the structure and focus of VPI+ teacher coaching; facilitators of and barriers to the VPI+ work (e.g., availability of teachers and coaches who meet qualifications, availability of classroom space, buy-in to the new formative assessment and curriculum, budget changes, and evaluation feedback); and updated staffing and budget information.

Teacher surveys. SRI conducted an online survey with VPI+ teachers in spring 2016 to learn about teachers' backgrounds, experiences, and qualifications; participation in PD and coaching; perceived usefulness of PD and coaching; their classroom practices, including use of certain curricula, formative assessments to inform instruction, and selected family and community engagement activities; buy-in for the new curriculum and formative assessment; perceived access to and use of comprehensive services by their students; and facilitators and barriers to VPI+ implementation. Nearly all VPI+ lead teachers (108 of 110) participated in the survey. The

number of teachers who responded to each survey item varies because sometimes not all teachers responded to an item, or an item was only answered by a subset of teachers based on a survey skip pattern. Furthermore, nearly half of the VPI+ teachers who responded to the teacher survey taught in one school division, Henrico County Public Schools (Exhibit 2).

Exhibit 2. VPI+ Teachers Who Participated in the Teacher Survey, by VPI+ School Division



Child summative assessment measures. Exhibit 3 lists the summative assessments that were collected on children in the 66 new VPI+ classrooms in fall and spring of preschool as well as the children in the additional 44 existing classrooms in the Henrico school division with blended funding that were brought up to VPI+ standards. SRI selected a battery of assessments to measure children’s development in all five Essential School Readiness Domains based on criteria included in Virginia’s solicitation for this work. When available, SRI used norm-referenced measures to permit the VPI+ Implementation Team and VDOE more broadly to determine the extent to which children in the program are meeting or exceeding normative averages.⁵ All measures have been used with children 4 to 6 years of age, children living in

⁵ Only the Woodcock-Johnson® III Applied Problems subtest and the Teacher-Child Rating Scale are considered norm-referenced measures.

different geographic regions, and children from different socioeconomic backgrounds and from different racial/ethnic groups. In short, these assessments have been widely used with similar populations of children as those who are participating in the VPI+ program. Descriptions of the measures are included below in the text as well as in a more detailed matrix in Appendix A.

Exhibit 3. Summative Child Assessment Measures by Domains

Essential School Readiness Domains and Skills	Assessment Measures	Data Collection Methods
Language and literacy Literacy	Phonological Awareness Literacy Screening for Preschoolers (PALS-PreK)	Teacher administered direct assessment
Cognition and General Knowledge Early math skills Cognitive flexibility	Woodcock-Johnson® III Applied Problems subtest Dimensional Change Card Sort (DCCS) task	SRI/SRC direct assessment SRI/SRC direct assessment
Approaches to Learning Task orientation	Teacher-Child Rating Scale (T-CRS 2.1)	Teacher report
Social and Emotional Development Self-regulation Peer social skills and behavior control	Head Toes Knees Shoulders (HTKS) Teacher-Child Rating Scale - 2.1 (T-CRS 2.1)	SRI/SRC direct assessment Teacher report
Physical Well-Being and Motor Development Health Fine and gross motor development	National survey item on health status Ratings of children’s motor skills (present/absent)	Teacher report Teacher report

Below is a brief description of each measure by domain.

- **Language and Literacy.** To assess children’s literacy skills, SRI used a measure already being used by VPI+ classrooms: the Phonological Awareness Literacy Screening for Preschoolers (PALS-PreK) measure (Invernizzi, Sullivan, Meier, & Swank, 2004). PALS-PreK assesses young children’s knowledge of important emerging literacy skills used in preschool, kindergarten, and first grade. There are eight tasks administered by teachers – name writing, upper-case alphabet knowledge, lower-case alphabet knowledge, beginning sound awareness (beginning phonemic identity), letter sounds, print and word awareness, rhyme awareness, and nursery rhyme awareness – although only six tasks administered were required of all preschool children. Therefore, the non-required tasks (i.e., lower-case alphabet and letter sounds) were not included in the Year 1 evaluation results because they were not collected on many children.⁶ Many PALS-PreK tasks include practice items to ensure the child understands what will be asked of him/her. The scores provided in this report are the raw sum scores for each task. Divisions received all of their PALS data from University of Virginia and then uploaded the results for participating children to SRI’s secure server.
- **Cognition and General Knowledge.**⁷ The cognitive and general knowledge domain includes several skills (e.g., general cognitive ability, early mathematics skills, early science knowledge), some of which were not assessed in the evaluation. SRI used two direct assessment measures of cognitive and general knowledge – early math skills were assessed using the Woodcock-Johnson® III Applied Problems subtest (Applied Problems) (Woodcock, McGrew, & Mather, 2001) and more general cognitive skills and cognitive flexibility were assessed using the Dimensional Change Card Sort task (DCCS) (Bauer & Zelazo, 2013; Zelazo, 2006).
 - The Applied Problems subtest is a widely used individually administered norm-referenced measure of a limited number of early math skills (e.g., counting, number sense) in which the assessor asks a child a series of questions and records the child’s answers until the child answers incorrectly for six consecutive

⁶ If a child correctly identifies 16 or more upper case letters, the lower case letter recognition task is administered. If a child identifies 9 or more lower case letters on lower-case alphabet awareness, the letter-sound task is administered.

⁷ SRI did not include an assessment of early science and instead focused on early math skills and general cognitive abilities.

items. It takes about 10 to 15 minutes to administer.⁸ The scores provided in this report are the raw sum scores for the subtest.

- The DCCS task is also a measure of executive functioning which conceptually is an aspect of social and emotional development as well as approaches to learning. Specifically, it measures a child's ability to shift attention from one set of rules to another. Children are asked to sort picture cards based first on one dimension (e.g., color), then on another dimension (e.g., shape), becoming increasingly more difficult such that in the third phase they are asked to sort using two categories (shape/border). It takes about 10 minutes to administer. The scores provided in this report are the raw sum scores across the task.
- **Approaches to Learning.** The approaches to learning domain is typically defined as the extent to which the child enjoys learning new tasks, demonstrates curiosity and initiative, and shows persistence when confronted with new skills or tasks. This domain does not typically reflect what skills children need to acquire, but rather how children approach learning across different skills, and is considered critical for school readiness and success in school. For the VPI+ summative evaluation, SRI selected a teacher-report measure of children's approaches to learning. Teachers were asked to rate children's behavior using the Teacher-Child Rating Scale (T-CRS 2.1; (Hightower & Perkins, 2010).⁹ The measure has 38 items and 4 subscales: task orientation, assertiveness, peer social skills, and behavior control. It takes about 5 minutes to complete for each child. The task orientation subscale taps into the construct identified by the National Research Council's definition of approaches to learning. The T-CRS 2.1 has robust psychometric properties and has been used in urban, rural, and suburban elementary school populations. In addition, it has been normed on a sample of urban preschool children. The items are summed for each subscale based on guidelines in the manual. Then, based on the child's gender and grade (preschool versus kindergarten), the child receives a percentile rank ranging from 1 to 99 for each subscale score. Higher percentiles indicate greater well-being and lower percentiles represent more problem behavior in that area. For example if a child has a percentile rank score of 35, this

⁸ SRI also reviewed the Research-based Early Mathematics Assessment-Short Version (REMA-SV) because it assesses a broader range of early math skills believed to be predictive of school success. There is some evidence that REMA-SV is sensitive to differences in young children's early math skills (Weiland et al., 2012). However, it does not have norm references.

⁹ The T-CRS and health/motor questions were provided to teachers using an online survey system.

means that 35% of the norm group scored as well or lower than the child and 65% of the norm group scored higher.

- **Social and Emotional Development.** The Social and Emotional Development domain includes several related skills that can be a challenge to measure, including getting along well with others and being able to express and regulate one's emotions. SRI used the two relevant T-CRS 2.1 subscales to identify children's skills and abilities in peer relations and behavior control. SRI also used a direct assessment of self-regulation – the Head Toes Knees Shoulders (HTKS) task (Ponitz et al., 2008; Ponitz, McClelland, Matthews, & Morrison, 2009), a brief assessment of children's behavioral self-regulation, which is an aspect of child's social and emotional development. The task takes approximately 10 minutes to administer and requires children to play a game in which they must do the opposite of what the assessor asks. It has shown strong reliability and validity in multiple studies and across diverse samples of children. It has been used primarily in experimental school-based research, translated into multiple languages, and used both within and outside the United States. The scores provided in this report are the raw sum scores for the task. It is not a norm-referenced measure.
- **Physical Well-Being and Motor Development.** To gather general health information, VPI+ teachers were asked to rate the health status of children using a standard item used by many national surveys.¹⁰ To assess children's motor development, SRI selected one fine motor item—the ability to hold a pencil properly—and seven gross motor skills that develop in children between 3 and 6 years of age—run without difficulty, kick a ball 6 feet, throw a ball 6 feet, jump up with both feet and land on both, catch a medium-sized ball, hop three times on one foot and then the other, and bounce a ball three times, on the basis of a review of standard gross and fine motor items asked on national surveys of children's health and development (Williams & Monsma, 2006). Teachers were asked to rate children's motor development using these standard items and asked to note whether a child could or could not perform these skills. Teachers could also use a rating of "don't know."¹¹ These skills were scored as absent or present. These items

¹⁰ The rating of general health is also used in the Early Childhood Longitudinal Study parent interview when the children were in kindergarten and on the National Survey of Children's Health. SRI collected data on children's health not as an outcome but as a potential risk characteristic that may influence children's development and learning.

¹¹ Approximately 10–20% of children were rated as "don't know" on most of the gross motor skills. Thus, SRI reported on three skills on which the majority of children were rated: running without difficulty, jump up with both feet and

are not norm-referenced, primarily because these are emerging skills over the preschool and kindergarten time period.

Assessment Procedures

Trained assessors hired by SRI's partner, School Readiness Consulting (SRC), conducted direct assessments using Applied Problems, DCCS, and HTKS. Children were assessed in English or Spanish based on a language screener conducted at the beginning of the assessment. All children whose home language was not English were screened for appropriateness of assessing the child in English. The same was true in the spring. If a child did not pass the English language screener but the child's home language was Spanish, then the child was tested in Spanish using the norm-referenced Bateria III Woodcock-Muñoz™ (Bateria III) (Muñoz-Sandoval, Woodcock, McGrew, & Mather, 2005) a parallel Spanish version of the Woodcock-Johnson® III (WJ III®) (Woodcock, McGrew, & Mather, 2001) and developer translated versions of the DCCS and HTKS. Approximately 20% of children were identified as speaking a language other than English at home by parent report in the fall of 2015. Of those children who spoke Spanish at home, 79% passed the English language screener and were assessed in English in the fall, 10% did not pass the English language screener and were assessed in Spanish in the fall, and 11% were not assessed in the fall due to staffing and time constraints or other reasons.¹² In spring 2016, 80% of children whose home language is Spanish passed the English language screener and were assessed in English, 17% did not pass the English language screener and were assessed in Spanish, and the remaining 3% of children were not screened or assessed because of other reasons (e.g., child absent).

Report Overview

This report presents findings on early VPI+ implementation and impacts. Chapter 2 presents enrollment, attrition and attendance patterns overall and by subgroups. Chapter 3 describes VPI+ program implementation and quality including program structural characteristics, teacher characteristics, curriculum and instruction, use of formative assessments, family engagement, comprehensive services, and classroom quality ratings. Chapter 4 highlights professional development and technical assistance provided to VPI+ coordinators, coaches, and family engagement coordinators by state partners, and it summarizes professional development and

land on both, and hold a pencil properly. Some teachers may have felt that they had not had a chance to observe the child at length and thus did not rate the child.

¹² Some of these children may have needed to be assessed in Spanish but the assessment team ran out of time or did not have enough bilingual assessors to complete this small percentage before the data collection window ended.

coaching efforts aimed at VPI+ teachers. Chapter 5 examines child outcomes for VPI+ students overall and by subgroups. Chapter 6 concludes the report with a discussion of potential implications from the Year 1 evaluation for VPI+ work moving forward.

2. Enrollment, Attrition, and Attendance

By December 2015, 1,230 VPI+ children who met the VPI+ eligibility criteria¹³ were enrolled (which includes 23 Title I children, and 161 Head Start in Henrico County Public Schools (HCPS) VPI+ blended classrooms). HCPS also served 389 VPI Improved children in their blended VPI+ classrooms. Thus, a total of 1,619 children were enrolled in new or blended VPI+ classrooms in fall 2015.

In March 2016, 1,234 VPI+ children were enrolled (which includes 25 Title I children and 155 Head Start children) (Exhibit 4). HCPS served an additional 377 VPI Improved children in their blended classrooms. Thus, a total of 1,611 children attended the 110 new or blended VPI+ classrooms in the spring.

Exhibit 4. Number of VPI+ Schools, Classrooms, and Children for Cohort 1 (2015–2016)

School Division	Number of Classrooms	Number of Schools	Number of Children Enrolled in Spring 2016
Brunswick County	1	1	12
Chesterfield County	9	9	141
Fairfax County	4	4	70
Giles County	2	2	34
Henrico County	10 (54)*	27	358*
Norfolk City	10	9	155
Petersburg City	5	1	79
Prince William County	8	8	144
Richmond City	9	6	120
Sussex County	2	1	20
Winchester City	6	4	101
TOTAL	66 (110)	72	1,234

*Note: Henrico County Public Schools (HCPS) opened 10 new classrooms as well as brought 44 existing VPI classrooms up to VPI+ standards, for a total of 54 VPI+ classrooms which served 178 VPI+ children, 25 Title I children, and 155 Head Start children. HCPS also served 377 VPI Improved children in their blended VPI+ classrooms that are not included in the spring VPI+ enrollment count.

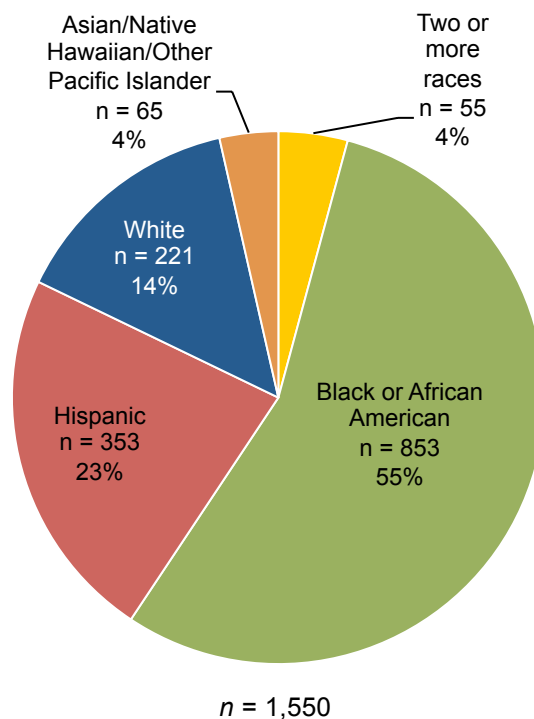
By the end of Year 1 (2015–2016), 1,551 children had been enrolled in one of the new or blended VPI+ classrooms in both fall 2015 and spring 2016 based on roster exports. This chapter presents the demographics and attendance data of the children who attended the entire year and attrition patterns for children who left before the program conclusion.

¹³ Eligibility criteria required that VPI+ children be four years of age on September 30, 2016 and from households at or below 200% of the federal poverty level.

Demographic Characteristics of Participating Children

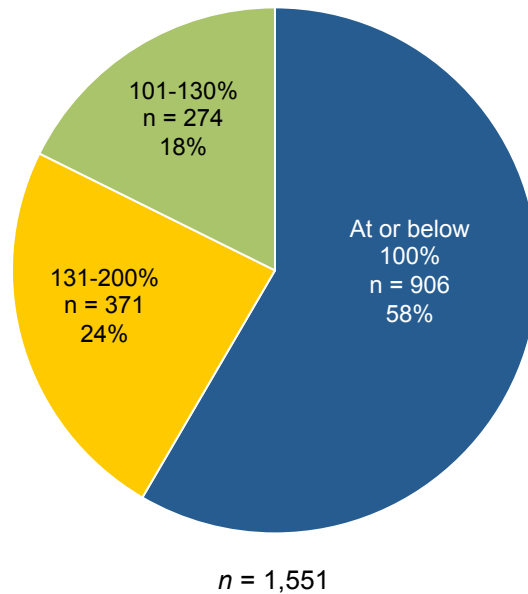
About half of the children who attended the entire year were female. Based on administrative data collected from the divisions in October, March, and June (i.e., End-of-Year), about 7% of the children were identified with a disability or delay, or had an Individualized Education Program (IEP) at some point during the year. A small percentage of children (5%) were identified as having fair or poor health as rated by teachers in the fall and spring. More than half (55%) of the children were identified as Black or African American; about one-fourth (23%) were Hispanic and 14% were White (Exhibit 5).

Exhibit 5. Race/Ethnicity of VPI+ Children



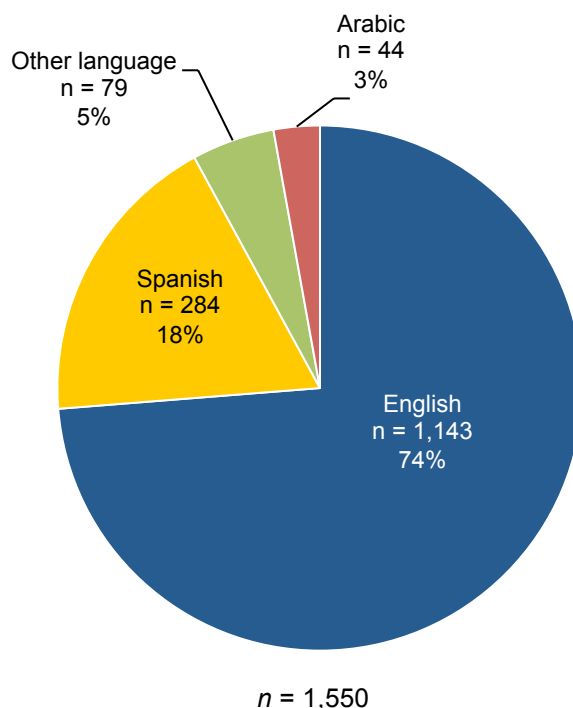
Children were only eligible to be enrolled in VPI+ if families' incomes were at or below 200% of the Federal Poverty Level (FPL). Exhibit 6 displays the distribution of children based on varying thresholds of household income: at or below 100% of the FPL, 101 to 130% of the FPL, and 131 to 200% of the FPL. More than half of children (58%) were from households at or below 100% of the FPL. About one-fourth of children were between 131% and 200%, and the remaining 18% were between 101% and 130% of the FPL.

Exhibit 6. Household FPL for VPI+ Children and Families



Children’s families indicated on school registration forms the primary language spoken at home. As seen in Exhibit 7, nearly three-fourths of the children spoke English at home. Nearly one-fifth of children spoke Spanish at home (18%), while the remaining children spoke Arabic (3%) or another language (5%). The percent of VPI+ children whose home language was English varied across divisions. In five school divisions, all VPI+ children spoke English at home. In the other six divisions, the percentage of children whose home language was English ranged widely from 24% to 83%.

Exhibit 7. Home Language of VPI+ Children



Attendance

Ensuring the expansion of and enrollment in high-quality preschool for those children most in need is just the first step. Also of great importance is dosage or uptake. In the case of VPI+ and preschool programming more broadly, attendance serves as a proxy for dosage, and measuring attendance can help illuminate the relationship between VPI+ participation and child outcomes. The limited research that exists suggests that children with better preschool attendance are more prepared for kindergarten, particularly if those children entered preschool with low skills (Ehrlich et al., 2014). In these studies, researchers typically examine chronic absenteeism—missing 10% or more of all school days which may be particularly worrisome because it has been found to be correlated with future absenteeism and lower reading scores in second grade (Ehrlich et al., 2014).

To examine attendance (or dosage) in the first year of VPI+ participants and any associations with children's gains on the outcome measures, school divisions provided administrative data that contained days of attendance for each VPI+ child. Children who were enrolled in VPI+ in the fall and spring and for whom divisions provided attendance data ($n = 1,497$) attended an average of 158 days out of an expected 180 days. Across divisions, average days of attendance ranged from 127 days to 161 days. Some missed days may have in part been a result of slight

delays in VPI+ recruitment and enrollment in fall 2015. Thus, number of days attended may reflect a later enrollment, absenteeism, and/or some combination of both. Because of this potentially late start of some children, we decided to examine attendance by “high” attenders defined as attending 80% or more of the days offered (assuming all 180 days were offered) instead of the standard 90% or more of the days offered.

Only about half (52%) of VPI+ children attended more than 90% of the 180 school days, most likely because of these delays in enrollment in the first year of implementation. The vast majority (85%) of VPI+ children attended 80% or more of the 180 school days. However, 15% missed 20% or more of school days—which is equivalent to 7 weeks or more of the VPI+ program. Most subgroups had similar attendance rates with the exception of children who were in fair or poor health who were more likely to miss 20% or more of the days (24% versus 14%, $p < .01$).

Attrition

During fall 2015, 1,619 children were enrolled in new or blended VPI+ classrooms. Eighty children left the program after the fall assessment period, resulting in a 5% attrition rate. Children who left VPI+ before the end of the year did not differ on race/ethnicity, IEP status or health status from those who stayed throughout the year. However, children who left were more likely to speak English as a home language compared with those who stayed (90% versus 80%, $p < .05$), and more likely to come from households at or below 100% of the FPL compared with those who stayed (71% versus 58%, $p < .05$).

In conclusion, VPI+ surpassed its goals for enrollment of high-risk children and kept 95% of those children enrolled for the full year. The vast majority (85%) of children attended at least 80% of school days and half (52%) attended 90% or more. The next chapter discusses the nature and quality of the programs these children received.

3. Program Implementation and Quality

This chapter describes the implementation of the VPI+ programs, addressing the extent to which VPI+ classrooms included the elements of high-quality preschool programs of the VPI+ model. We then present quality ratings of the VPI+ programs to demonstrate the extent to which VPI+ programs were reaching established benchmarks of high quality.

High-Quality Program Characteristics

The Preschool Development Grant (PDG) requirements specify implementation components that are consistent with a high-quality preschool program, and the grant provides VPI+ programs support in implementing these features. As reported in the Virginia Preschool Initiative-Plus Formative Evaluation Report (February 2016), each division provided data in December 2015 about the components of the VPI+ programs. These data confirmed that all VPI+ programs met the PDG expectations for:

- structural program characteristics (such as class size, child-to-instructional-staff ratio, full day scheduling, and teachers' salaries);
- VPI+ teacher characteristics and training (such as teachers' educational and licensure credentials and high-quality professional development and coaching of teachers);
- use of a developmentally-appropriate, evidence-based curriculum and formative assessments;
- inclusion and full participation of children with disabilities, including individualized accommodations;
- support for families (such as engagement with families as decision makers, availability of on-site comprehensive services for children and families, and targeted outreach to hard-to-reach families);
- program evaluation to ensure continuous improvement through the Virginia Quality Rating Improvement System (QRIS); and
- summative assessments in fall and spring that will be integrated into the Virginia Longitudinal Data System.¹⁴

¹⁴ Ten of the 11 divisions participated in fall summative assessments. One division had additional human subject approval requirements that could not be approved in time for participation in fall summative assessments. All divisions participated in summative assessments by spring 2016.

In Year 1, semi-structured interviews with program coordinators and surveys of coordinators and VPI+ teachers provided specific information about the features and implementation of the VPI+ programs. Data from those sources are summarized below.

Structural program characteristics

VPI+ programs all had structural features that are expected in high-quality preschools. For example, all VPI+ programs offered full-day schedules, providing 5.5 hours or more of instructional time each day.¹⁵ Likewise, VPI+ teachers' salaries averaged \$47,487 and ranged from \$29,965 to \$82,234. The average VPI+ teacher annual salary was \$5,000 lower than that of K-12 teachers in Virginia, whose average salary was \$54,486,¹⁶ but this may have been due to VPI+ teachers having less years of experience within their divisions. In addition, nearly all VPI+ classrooms (98%) met the requirement of having 18 or fewer children: VPI+ class sizes ranged from 11 to 19 and averaged 17.3 children. The average child-to-instructional staff ratio was 8.5 children to 1 teacher, meeting the PDG criterion of no more than 10 children to 1 instructor.¹⁷

Teacher characteristics

A research-based quality standard for preschool programs is to employ teachers who have, at a minimum, a bachelor's degree and specific training in early childhood education.¹⁸ All VPI+ teachers held a bachelor's degree and nearly half (47%) held a master's degree. A majority of VPI+ teaching assistants held an associate's degree or higher (70%). In addition, the majority of VPI+ classes were taught by teachers with either a collegiate professional license (44%) or a postgraduate professional license (45%), and all teachers had an elementary teaching license endorsement that included preschool.¹⁹

In addition to their educational credentials, a majority of VPI+ teachers had some previous experience teaching preschool (68%), but many were relatively new to the field (Exhibit 8). More than half of VPI+ teachers had no previous experience or had taught preschool for fewer than two years. However, among those who were teaching preschool for the first time in 2015–2016, more than half (56%) had been teachers in elementary schools the previous year.

¹⁵ Information on hours of instruction was reported by VDOE to SRI..

¹⁶ DLAS Document Summary: 2015–2016 Teacher Salary Survey Results:

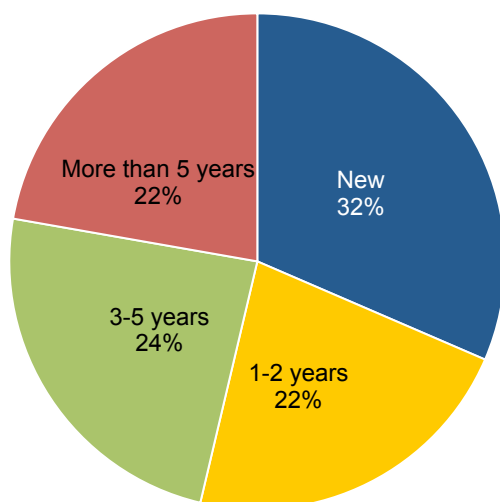
http://www.doe.virginia.gov/teaching/workforce_data/salaries/2015-2016_salary_report.pdf

¹⁷ VDOE required divisions to have a lower child-to-instructional staff ratio than PDG. All but one division met the more conservative VDOE ratio.

¹⁸ The State of Preschool 2013: <http://www.nieer.org/sites/nieer/files/yearbook2013.pdf>

¹⁹ One teacher is currently in the process of applying for her license.

Exhibit 8. Years of Experience Teaching Preschool



n = 108

The majority (67%) of VPI+ teachers also were new to their schools in 2015–2016. However, most teachers who had previous experience had taught in division-operated preschool classrooms in the same school divisions the prior year.

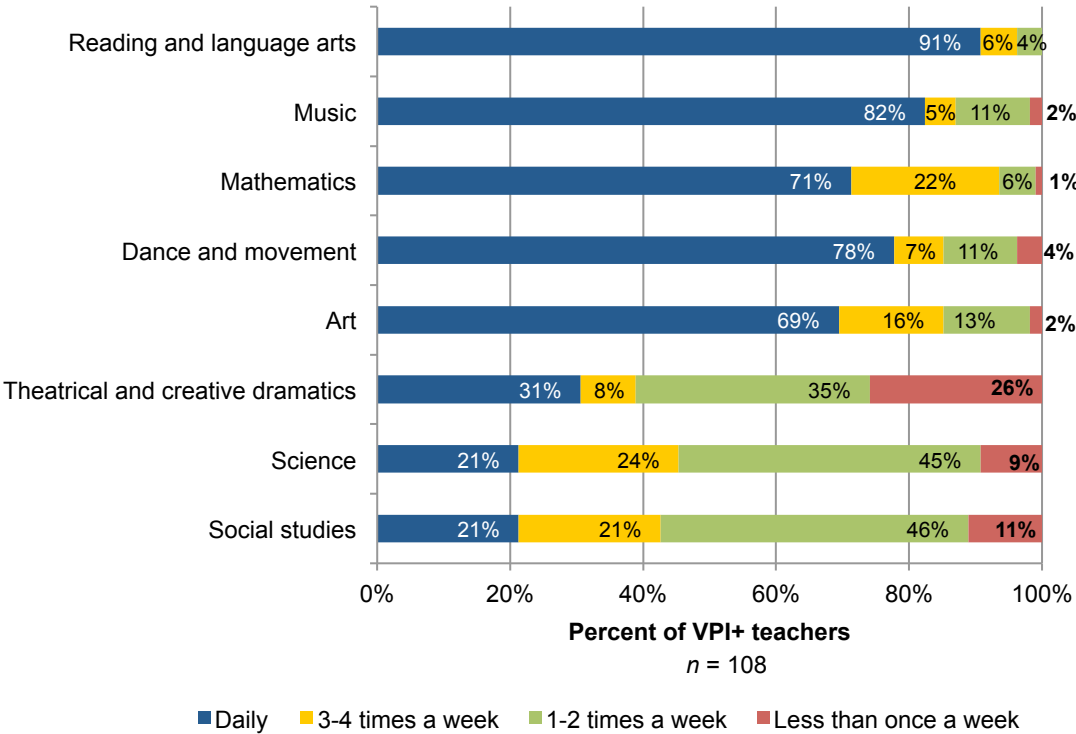
Curriculum and instruction

In the 2015–2016 school year, the majority of VPI+ teachers across divisions (68%) were implementing their program’s curriculum for the first time. Eight of the eleven divisions were using *The Creative Curriculum*[®], and only 9% of teachers in these divisions had used it before. In the three school divisions implementing other curricula, 52% of the teachers had used the curriculum before the 2015–16 school year.

Despite many VPI+ teachers having to master a new curriculum and the perception of a few coordinators that teachers did not have buy-in, most VPI+ teachers reported feeling prepared to use their curriculum. Only a small minority reported they didn’t have the materials they needed or that they didn’t feel confident implementing the curriculum. In addition, most VPI+ teachers strongly or somewhat agreed that their curriculum prepared their students for kindergarten, their classrooms had materials to support the curriculum, and they were confident in their ability to teach the curriculum. Nevertheless, five VPI+ coordinators still felt that additional training for teachers would improve implementation quality.

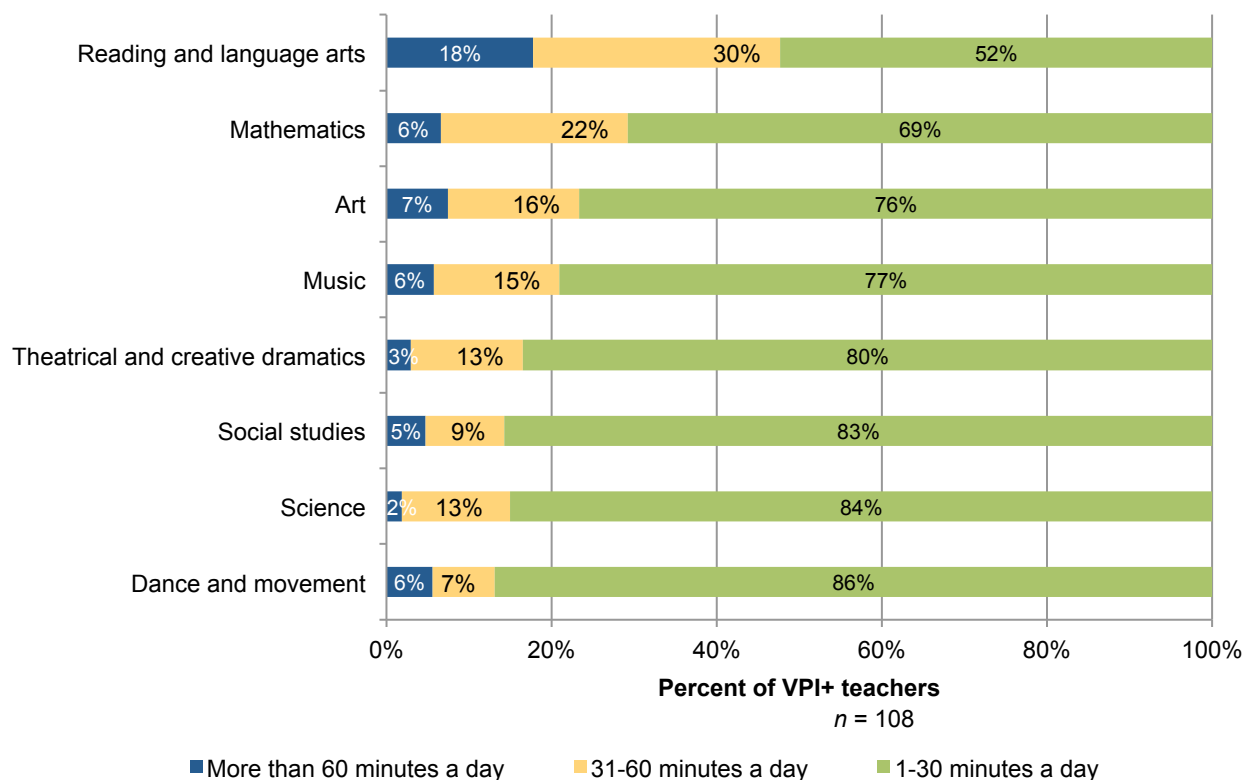
Children in VPI+ classrooms received instruction in a wide range of content areas, but nearly all VPI+ teachers particularly emphasized reading and language arts activities. Almost all VPI+ teachers (91%) reported that children in their classes usually worked daily on lessons or projects involving reading and language arts, and these activities typically consumed more instruction time than activities in other content areas. Most VPI+ teachers also reported that their children participated in daily projects or lessons focused on music (82% of teachers), dance and movement (78%), mathematics (71%), and art (69%). Less than a third of VPI+ teachers offered daily activities focused on theatrical and creative dramatics, science, and social studies (Exhibit 9).

Exhibit 9. Frequency Subject Areas Taught in VPI+ Classrooms



Children usually spent 30 minutes or less on each content area. However, nearly half of VPI+ teachers reported that children received more than 30 minutes of reading or language arts per day, with almost a fifth of teachers reporting that children receive more than an hour per day on those subjects. See Exhibit 10.

Exhibit 10. Amount of Time Subject Is Taught on a Day When Taught



Formative assessment use

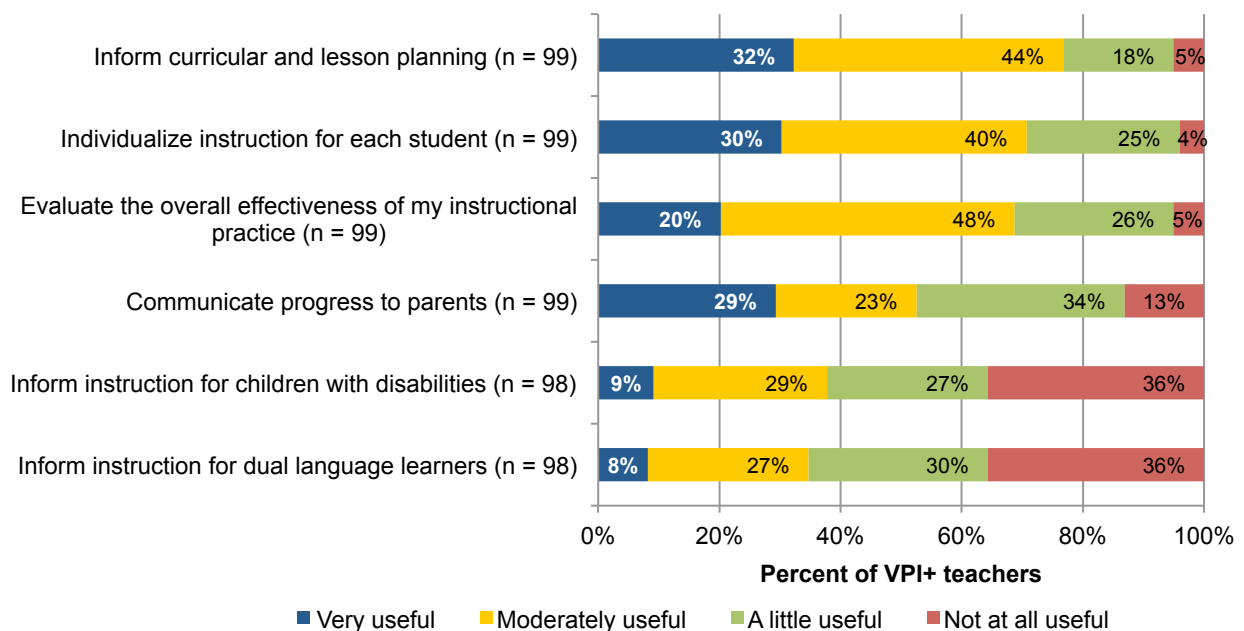
To help teachers individualize instruction, monitor the effectiveness of their own instruction, plan lessons, communicate children’s progress with families, and support children who are dual language learners (DLL) and those who have disabilities, all VPI+ teachers were required to use the *GOLD™* formative assessment multiple times a year. Interview and survey data reflect that overall, by the end of fall 2015, VPI+ teachers felt confident administering the assessment and interpreting its results, despite early challenges with mastering the mechanics and technology of *GOLD™*.

By the end of fall 2015, more than half of VPI+ coordinators reported that teachers were making progress toward mastering the assessment; however, coordinator survey data from spring 2016 revealed that five VPI+ coordinators felt that the initial teacher training on *GOLD™* was insufficient and that more training was necessary before the start of the 2016-17 school year.

Despite challenges early in implementation, a large majority of VPI+ teachers strongly or somewhat agreed that they felt confident collecting data using the *GOLD™* formative assessment (90%), and interpreting *GOLD™* results (92%).

VPI+ teachers also reported on the usefulness of the *GOLD*[™] assessment to inform their instruction (Exhibit 11). The majority of VPI+ teachers agreed that *GOLD*[™] was very or moderately useful for informing curricular and lesson planning, individualizing instruction for children, and evaluating the effectiveness of their own practice. Teachers were less likely to report benefits of using *GOLD*[™] to inform instruction of children with disabilities or who are DLLs. About half of VPI+ teachers also reported that *GOLD*[™] was very or moderately useful for communicating children’s progress to parents or guardians.

Exhibit 11. Perceived Usefulness of *GOLD*[™] for Instruction

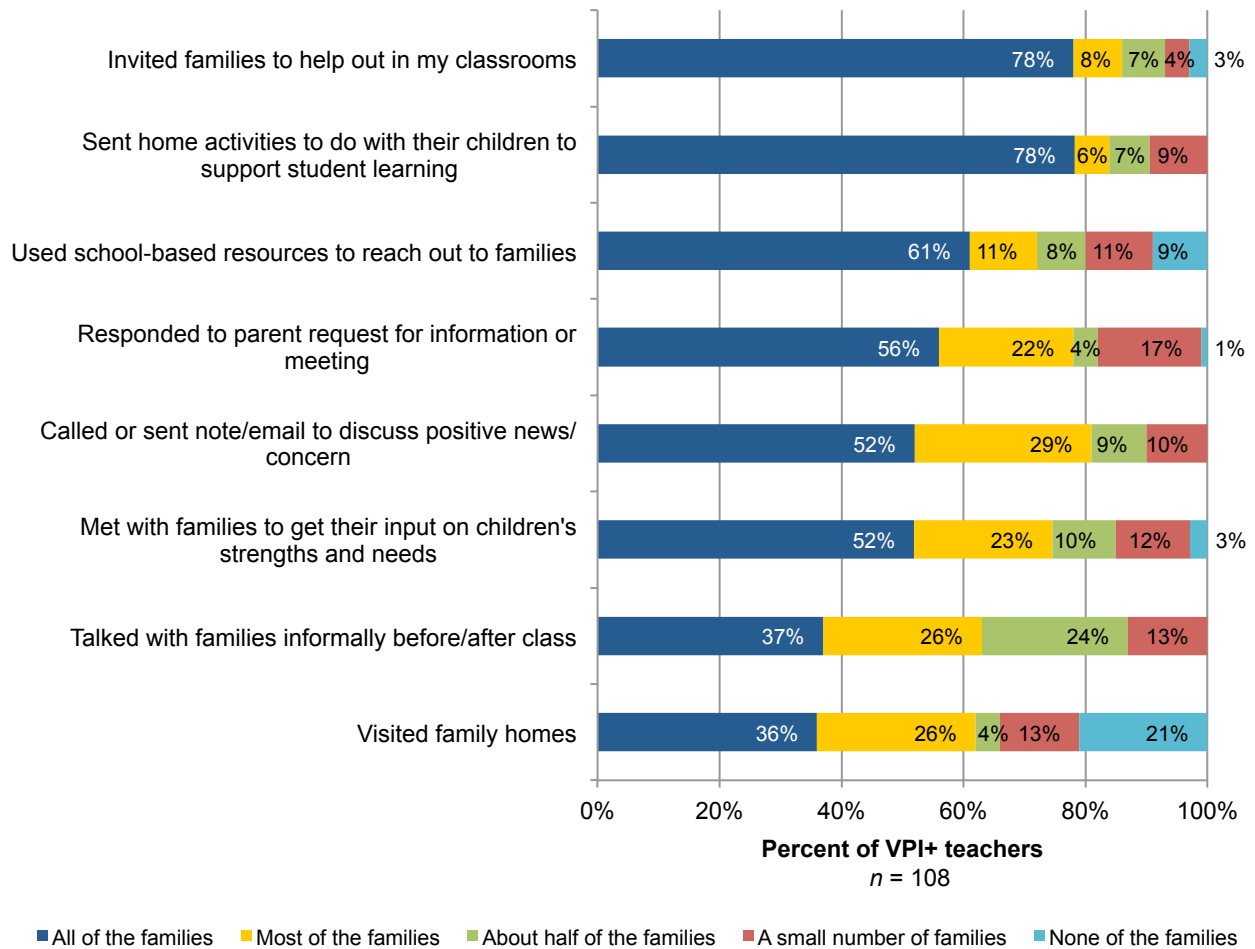


Family Engagement in Learning

About a third of VPI+ teachers found a lack of family engagement to be a great or moderate challenge to providing the best educational experience for their children. Teachers communicated with all of most of their students’ families in a variety of ways (Exhibit 12). For example, the majority of VPI+ teachers (86%) invited all or most of their students’ families to help in the classroom and sent home activities for families to do with their children. Most VPI+ teachers also reported that they communicated with families through notes or emails (81%), responded to requests for information or meetings (78%), met with parents or guardians to discuss their children’s strengths and needs (75%), and used school-based resources (such as family engagement coordinators) to reach families (72%). Fewer VPI+ teachers reported talking

with all or most of their students' parents or guardians informally before or after class or visiting families in their homes (63% and 62%).

Exhibit 12. Proportion of Families VPI+ Teachers Engaged in Various Ways



Comprehensive services

Family wellbeing is a strong predictor of children's school readiness, and federal guidance encourages schools to systematically support families in promoting their children's learning, development, and health.²⁰ As part of the PDG grant, VPI+ programs receive increased funding to provide a comprehensive set of services to children and families to increase family engagement in children's learning. Accordingly, in surveys and interviews, VPI+ Coordinators

²⁰ U.S. Department of Health and Human Services and U.S. Department of Education. (May 5, 2016). Policy Statement on Family Engagement from the Early Years to the Early Grades. Retrieved from <https://www2.ed.gov/about/inits/ed/earlylearning/files/policy-statement-on-family-engagement.pdf>

reported that large majorities of children enrolled in VPI+ programs and their families had readily available access to a wide range of local services and supports.

Coordinators reported that families of nearly all VPI+ children (95-100%) had access to hearing services, vision services, food bank services, and adult education services. Nearly as many children in VPI+ classrooms and their families (90-94%) could receive counseling, dental, and health services. The majority of children and their families also had access to family resource centers, prenatal services, insurance enrollment, WIC enrollment, and transportation. Services available to children and families in 54-59% of VPI+ classrooms included mental health services for children and for families, and substance abuse treatment for families. Emergency housing was available to children in 21% of VPI+ classrooms. Family engagement coordinators and other VPI+ staff advertised these resources widely and worked in collaboration with public and community-based agencies to identify families in need and connect them to available services.

Results of a survey of VPI+ parents conducted by Virginia Department of Education in spring 2016 show that many families were accessing needed supports as a result of their participation in VPI+. Among parents who responded to the survey (N = 860, 54% of those surveyed) a majority (68%) reported that their child or other family members had received screenings (hearing, vision, speech, medical, or dental checks) as a result of their involvement with VPI+. More than 40% reported that their child or family members received medical or dental treatment. In contrast, fewer than 10% had received mental health services, although a large majority (nearly 80%) indicated that they did not need these services. About 15% of responding parents reported that their child or family got health insurance as a result of their VPI+ experience, and fewer than 10% reported that they did not get health insurance but it would have been helpful. Many parent respondents commented on the high quality of services they received and expressed appreciation for VPI+ staff who supported them.

Program Quality Ratings

All VPI+ programs participated in Virginia's tiered quality rating and improvement system (QRIS), which provides ratings from classroom observations that can be used to assess the quality of program implementation. Ratings derived from two standardized observation tools, CLASS[®] and ECERS-R, are included in Virginia's QRIS and inform the quality of VPI+ programs in specific domains associated with high-quality preschools. This section provides a brief overview of Virginia's QRIS and the two observation tools, followed by the corresponding program quality ratings for Year 1 of VPI+.

Virginia's Quality Ratings and Improvement System (QRIS): Virginia Quality

Virginia's QRIS, called Virginia Quality, uses observations to inform a scaled set of program standards that participating programs use to continuously improve quality. The QRIS is administered statewide through a public-private partnership between the Virginia Department of Social Services' Office of Early Childhood Development and the Virginia Early Childhood Foundation (VECF).

Virginia's Quality Standards assigns levels to child care and preschool programs based on four elements: education and qualifications, curriculum and assessment, environment, and interactions. Participating programs receive a rating from Level 1 to Level 5. Level 1 indicates lower quality, and Level 5 indicates higher quality.

All standards for the first two elements (education and qualifications, and curriculum and assessment) must be scored at Level 3 or higher before an unbiased, trained observer conducts classroom observations, using CLASS[®] and ECERS-R (described below), to determine if the overall program qualifies for a Level 4 or Level 5 rating. Exhibit 13 shows the required scores on CLASS[®] domains and ECERS-R subscales to receive ratings of Level 4 and Level 5 on Virginia Quality.

Exhibit 13. Requirements for Level 4 and Level 5 Ratings of the Virginia QRIS

Level 4 Rating	Level 5 Rating
<ul style="list-style-type: none"> • Achieve an average ECERS-R score of 4.00 or higher across four ECERS-R subscales: Language-Reasoning, Activities, Interaction, and Program Structure. • Achieve an average CLASS® PreK score of 5.00 or higher in Emotional Support domain and Classroom Organization domain. • Achieve an average CLASS® PreK score of 3.25 or higher in Instructional Support domain. 	<ul style="list-style-type: none"> • Achieve an average ECERS-R score of 5.00 or higher across four ECERS-R subscales: Language-Reasoning, Activities, Interaction, and Program Structure. • Achieve an average CLASS® PreK score of 6.00 or higher in Emotional Support domain and Classroom Organization domain. • Achieve an average CLASS® PreK score of 4.25 or higher in Instructional Support domain.

Quality rating measures

Classroom Assessment Scoring System (CLASS®). The CLASS® measures daily interactions between teachers and students and among students in three domains: emotional support, classroom organization, and instructional support. Each domain includes various dimensions. Trained classroom observers rate classroom activities on each dimension on a scale from 1 to 7. Observers make ratings during four to six 15- to 20-minute observation cycles. Dimension ratings are then averaged across observation cycles, and the averaged dimension ratings within each domain yield a domain score.

Using national data of state PreK programs, researchers have identified CLASS® threshold scores that are associated with improved child outcomes. For the purpose of the Virginia QRIS, these thresholds are 5 or higher in the Emotional Support and Classroom Organization domains and 3.25 or higher in the Instructional Support domain.

Early Childhood Environment Rating Scale-Revised (ECERS-R). The ECERS-R is designed to measure the process quality of early childhood classrooms serving children ages 2 through 5. Process quality focuses on the interactions in a classroom among children and staff, parents, and other children, as well as the materials and activities in the learning environment. Process quality also includes features such as space, schedules, and materials that relate to these interactions.

Virginia Quality includes four of the seven ECERS-R subscales²¹: Language-Reasoning, Activities, Interaction, and Program Structure. Within each subscale, items are scored from 1 to 7 or not applicable and then averaged to create a subscale score. The four subscale scores are averaged to provide a total scale score (ECERS-R average), which can range from 1.00 to 7.00.

²¹ ECERS-R subscales are: (1) Language-Reasoning, (2) Activities, (3) Interaction, (4) Program Structure, (5) Space and Furnishings, (6) Personal Care Routines, and (7) Parents and Staff.

As categorized by the ECERS-R developer, scores falling between 1.00 and 1.99 represent “inadequate” process quality; scores falling between 2.00 and 3.99 represent “minimal” process quality; scores falling between 4.00 and 5.99 represent “good” process quality; and scores falling between 6.00 and 7.00 represent “excellent” process quality. VPI+ follows the minimum threshold set by Virginia Quality, which is 4.00 or higher across the four ECERS-R subscales.

Goals and Year 1 outcomes for overall quality and teacher-child interactions

As of December 2015, all 64 VPI+ programs had been rated for Virginia’s QRIS, including 53 schools (sites) being rated on both CLASS® and ECERS-R, and 11 VPI+ classrooms being rated on CLASS® only. Because Virginia Quality provides ratings at the school/site (not classroom) level, ECERS-R observers provided ratings for 1 out of 3 classrooms for 4-year olds.

VPI+ set two goals involving overall program quality and the quality of teacher-child interactions in VPI+ classrooms. Exhibit 14 presents the established thresholds for meeting the goals and the findings from Year 1. VPI+ programs met and exceeded the overall program quality goal (100% of VPI+ programs achieved a quality level of at least 3). VPI+ programs did not meet the goal for teacher-child interactions: 50% of classrooms will score at least 5 in the Emotional Support and Classroom Organization domains and a 3.25 or higher in the Instructional Support domain)– only 38% of VPI+ classroom met these thresholds.

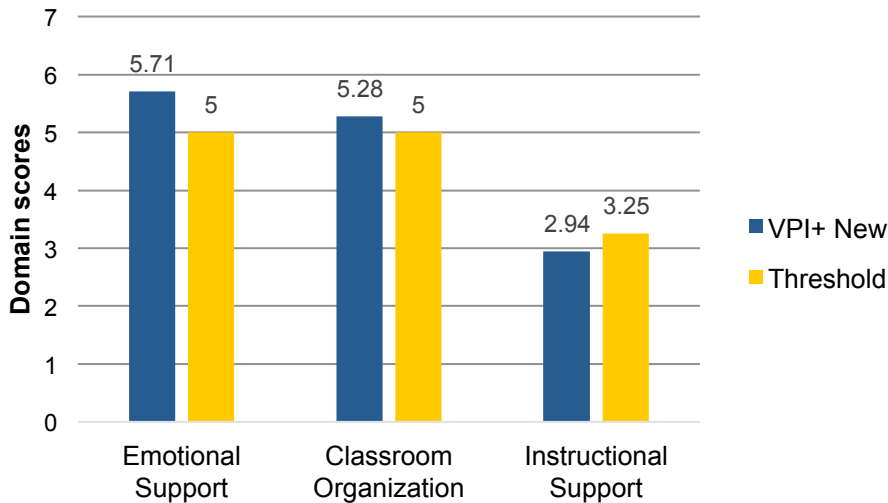
Exhibit 14. Summary of Virginia QRIS Goals for VPI+ Classrooms, Year 1

	GOALS	YEAR 1 FINDINGS
Goal 1 – Program Quality (53 sites) ²²	<ul style="list-style-type: none"> • Year 1: 60% of VPI+ programs will be at quality level 3 • Year 3: 80% of VPI+ programs will be at quality level 4 or 5 	<ul style="list-style-type: none"> • 100% of 3 sites met the QRIS Level 3 requirements. <ul style="list-style-type: none"> ○ 33 sites met Level 3 requirements ○ 19 sites met Level 4 requirements ○ 1 site met Level 5 requirements
Goal 2 – Quality of Teacher-Child Interactions (64 classrooms)	<ul style="list-style-type: none"> • Year 1: 50% of VPI+ classrooms will have a 5 or higher in the Emotional Support/Classroom Organization domains and a 3.25 or higher in the Instructional Support domain. • Year 3: 75% of VPI+ classrooms will have a 5 or higher in the Emotional Support/Classroom Organization domains and a 3.25 or higher in the Instructional Support domain. 	<ul style="list-style-type: none"> • 38% (24 of the 64) classrooms had a 5 or higher in Emotional Support and Classroom Organization domains and a 3.25 or higher in the Instructional Support domain. <ul style="list-style-type: none"> ○ The average score across 64 classrooms for the Emotional Support/Classroom Organizations domains was 5.50. 84% of VPI+ classrooms exceeded the threshold of 5.0 in Emotional Support/Classroom Organization. ○ The average score across 64 classrooms for the Instructional Support domain was 2.94. 41% of VPI+ classroom exceeded the threshold of 3.25 in Instructional Support.

²² Goal 1 program quality ratings are awarded at the school/site level, even if a site has more than one classroom, while Goal 2 teacher-child interaction ratings are awarded to each class, which accounts for the differences in sample size.

Year 1 CLASS[®] Scores. VPI+ classrooms met the 5.0 threshold set by the Virginia QRIS on two of the three CLASS[®] domains. On average, VPI+ classrooms were rated as moderately high on Emotional Support and Classroom Organization (Exhibit 15). On average, VPI+ classrooms were rated as slightly low on the Instructional Support domain and had not yet reached the threshold in this area.

Exhibit 15. CLASS[®] PreK Domain Scores - Fall 2015, VPI+ Classrooms



CLASS[®] ratings of the VPI+ classrooms varied by school division. All school divisions met the 5.0 threshold for Emotional Support. Most school divisions (8 of 11) also met the threshold for Classroom Organization. Only 1 of the 11 divisions met the threshold for Instructional Support (Exhibit 16).

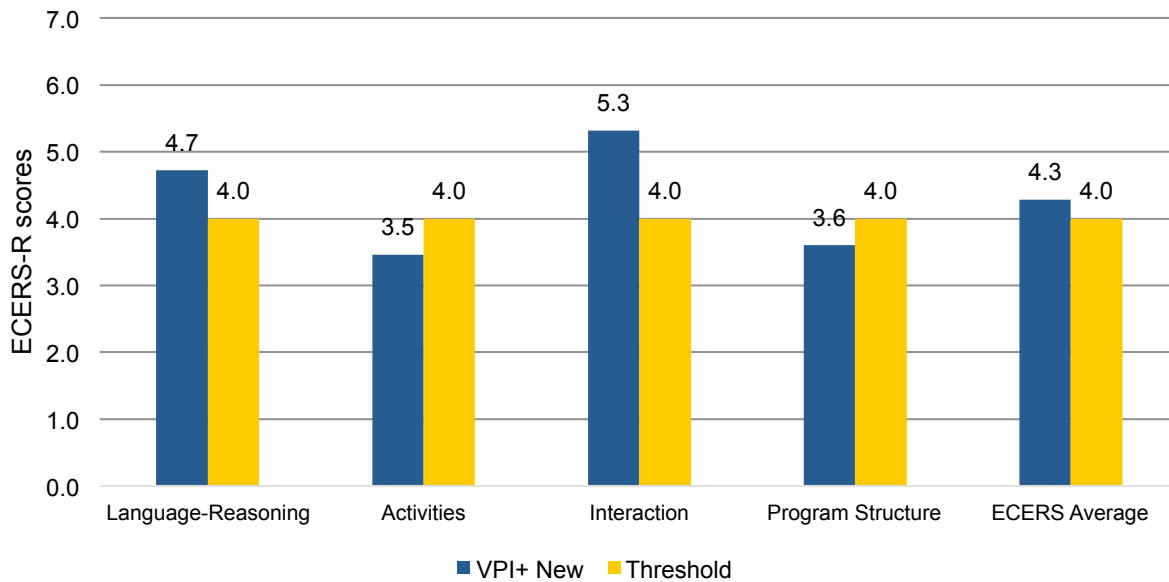
Exhibit 16. CLASS[®] PreK Domain Averages for VPI+ Classrooms, by School Division

	Emotional Support	Classroom Organization	Instructional Support
Division 1	5.50	5.17	2.21
Division 2	5.70	5.29	3.06
Division 3	5.53	5.30	2.68
Division 4	5.95	5.57	3.66
Division 5	5.60	4.72	2.60
Division 6	5.96	5.50	3.17
Division 7	5.25	4.54	2.79
Division 8	5.60	5.00	2.89
Division 9	5.00	4.67	1.92
Division 10	5.66	5.24	2.47
Division 11	5.86	5.60	3.09
Total VPI+	5.71	5.28	2.94

Note: VPI+ division averages are an average of all classrooms in the division; Total VPI+ averages are an average of all classrooms from all VPI+ divisions.

Year 1 ECERS-R Scores. Overall, VPI+ program sites were rated as “good” when their scores were averaged across the four ECERS-R subscales, and ECERS-R average scores met the threshold of 4.0 (Exhibit 17). On average, the 53 VPI+ program sites having ECERS-R ratings also met the threshold on two of the four subscales: Language-Reasoning and Interaction. Programs were slightly below that threshold on the Activities and Program Structure subscales.

Exhibit 17. ECERS-R Score Averages – Fall 2015, VPI+ Program Sites



ECERS-R ratings of VPI+ program sites varied across school divisions (Exhibit 18). All but two of the school divisions met the 4.0 threshold for Language-Reasoning. Only one school division met the 4.0 threshold for Activities. In contrast, all but one school division met or surpassed the 4.0 threshold set for Interaction, which raised the overall ECERS-R average for most school divisions. Finally, three of 11 school divisions met the threshold for Program Structure.

Exhibit 18. Fall 2015 ECERS-R Subscale Averages for VPI+ Program Sites, by School Division

	Language-Reasoning	Activities	Interaction	Program Structure	ECERS-R Average
Division 1	4.25	2.55	5.15	2.00	3.49
Division 2	5.75	3.97	5.20	4.71	4.91
Division 3	4.58	3.35	4.31	3.41	3.91
Division 4	4.78	3.51	5.87	3.60	4.44
Division 5	4.50	3.83	5.40	4.00	4.43
Division 6	5.19	4.06	5.95	3.58	4.70
Division 7	2.50	1.80	2.40	1.33	2.01
Division 8	4.80	3.42	5.15	4.00	4.34
Division 9	3.50	2.60	5.20	2.67	3.49
Division 10	5.19	3.12	5.79	3.37	4.37
Division 11	4.16	3.32	5.55	3.84	4.22
Total VPI+	4.72	3.46	5.32	3.60	4.28

Note: VPI+ division averages are an average of all program sites in the division; Total VPI+ averages are an average of all program sites from all participating VPI+ divisions.

4. Professional Development and Technical Assistance

This chapter discusses the broad range of professional development activities and technical assistance delivered in the first year of VPI+ implementation. The grant enabled a network of state agencies and partners to train and support local VPI+ leaders, such as division coordinators, coaches, and family engagement coordinators, as they took on new roles and responsibilities. It also promoted intensive professional development of VPI+ classroom teachers as they worked to establish high-quality preschool programming for children. The first section of this chapter discusses the technical assistance and trainings delivered by state partners to VPI+ division coordinators, coaches, and family engagement coordinators. The next section describes training and professional development delivered to VPI+ teachers, in particular through individualized and group coaching.

Training and Technical Assistance for Coordinators, Coaches, and Family Engagement Coordinators

Using a variety of formats, the following Virginia state agencies and partners provided technical assistance and trainings for VPI+ coordinators, coaches, and family engagement coordinators:

- Virginia Department of Education (VDOE) provided technical assistance to VPI+ coordinators, coaches, and family engagement coordinators on all components of grant implementation.
- Virginia Early Childhood Foundation (VECF) provided training on use of Virginia's QRIS, including CLASS[®] and the ECERS-R to guide program improvement efforts.
- The Center for Advanced Study of Teaching and Learning (CASTL) at the University of Virginia provided coach training and support and technical assistance to school division leaders on the development of continuous improvement plans, improving teacher practices, and selecting coaching models.

Below we present the content and format of the professional development activities that each partner implemented in Year 1.

Virginia Department of Education (VDOE) technical assistance and trainings

During the first year of implementation, VDOE led many activities to support VPI+ staff in their professional development. These included conducting meetings and a series of webinars, hosting and promoting conferences, and vetting the quality of professional development

opportunities for VPI+ school divisions through a competitive proposal process that resulted in an approved professional development vendor list.

During Year 1, VDOE staff conducted phone calls and site visits with each school division at least twice. These contacts provided opportunities to discuss divisions' progress in engaging at-risk families and children for the VPI+ program, recruitment of children for available VPI+ classroom slots, grant and budget compliance, and plans for Year 2 of VPI+.

VDOE also hosted webinars on a wide range of topics. Topics included components of VPI+ implementation (e.g., curriculum and formative assessment; family engagement; Virginia's QRIS; high-quality professional development and coaching); grant requirements and administration (e.g., data collection; budgets; VDOE monitoring of program and fiscal grant activities; required data reporting for the PDG; planning for Year 2 of VPI+ implementation), and outreach and inclusion (e.g., recruitment of children from hard-to-reach families; inclusion of children with disabilities; services for homeless children and families; early identification of disabilities).

In April 2016, VDOE's Technical Assistance Center (T/TAC) held a webinar focused on promoting social-emotional growth in early childhood. VDOE also supported VPI+ divisions in sending staff to early childhood professional development conferences and trainings, including two school division teams that attended the National Early Childhood Inclusion Institute in North Carolina.

Through a competitive procurement process, VDOE established a menu of approved professional development opportunities in early childhood education that school divisions could purchase with grant funds for use in individualized professional development plans being developed for each VPI+ teacher. The menu included training and technical assistance on 54 early childhood education topics offered by nine vendors.

Virginia Early Childhood Foundation (VECF) technical assistance and trainings

VECF provided VPI+ school division leaders and coaches with training on Virginia's QRIS, including the CLASS[®] and ECERS-R. (See the Program Implementation and Quality chapter for information about these measures.) QRIS training for division leaders included an orientation to the standards and a webinar addressing use of the QRIS summary report to set professional development goals.

VECF staff participated in several in-person trainings. For example, they presented information on scoring the ECERS-R at a CASTL coach training in Fall 2015 and presented CLASS[®] and ECERS-R data from VPI+ classrooms at the VPI+ Leadership Academies (see CASTL, below), VECF also provided an in-person, two-day CLASS[®] training to staff from five VPI+ divisions to support coaches and other division staff in becoming certified CLASS[®] observers.

CASTL technical assistance and trainings

VDOE contracted with the Center for Advanced Study of Teaching and Learning (CASTL) at the University of Virginia to provide technical assistance and professional development for VPI+ coordinators, coaches, and family engagement coordinators. CASTL conducted a needs assessment with VPI+ school divisions and reported the findings to VDOE in late spring/early summer of 2015. The results of that study drove the types of professional development that CASTL provided in Year 1 of the VPI+ implementation. This included offering division-wide support through professional development activities and resource sharing, as well as offering training and technical assistance explicitly designed for coaches.

Division staff training and support. CASTL's professional development services for staff in VPI+ divisions focused on enhancing high-quality implementation of curricula and effective teacher-child interactions, while building a community of learning among coaches across VPI+ divisions. Specific activities included an initial in-person meeting at each division to gather information and begin planning; phone consultations to discuss annual plans, challenges, and solutions; and two webinars – one on professional development planning and another on planning for the Leadership Academy (discussed below). CASTL also worked closely with divisions on their implementation plans for year 2 of the VPI+ initiative.

CASTL staff also led two regional 2-day VPI+ Leadership Academies, one in January and one in March 2016. These regional training sessions focused on data use for continuous improvement and professional development planning. Division coordinators, together with their family engagement coordinators and coaches, also received phone consultations with CASTL staff on developing continuous improvement plans and identifying coaching models for Year 2.

Coach training and support. CASTL also provided additional training specifically for coaches. These activities included in-person trainings, webinars, conference calls, and individual phone consultations. One of CASTL's in-person coach trainings focused on the Practice-Based Coaching framework and an introduction to professional development aligned with quality teaching practices, while the other focused on working effectively with teachers and the use of

video and audio for enhancing teacher practices. CASTL staff also held a webinar on using video to support teacher reflection and facilitated group calls about motivating teacher change using video review. Individual calls with coaches covered topics such as improving coaching focus and intensity, strategies for motivating teacher change, and other division-specific topics.

Professional development resources. CASTL staff curated and shared via an initiative website, free, online professional development resources (e.g., briefs, e-books, webinars, videos, learning modules, and templates) that coaches and coordinators could use in professional development planning. These resources covered topics such as the five essential domains of development, CLASS[®] and ECERS-R, challenging behaviors, dual language learners (DLLs), cultural competency, assessment, and family engagement.

Other state partner technical assistance and trainings

Additional trainings and conferences endorsed by VDOE were offered by entities outside of VDOE, VECF, and CASTL such as the Virginia Department of Health and Human Resources, Virginia Department of Social Services, other centers in at the University of Virginia, Virginia Association for Supervision and Curriculum Development, and Virginia Cross-Sector Professional Development Central Regional Consortium. For example, a federal Preschool Development Grant Dual Language Learner Community of Practice hosted a national webinar on an assessment tool to increase awareness of practices with dual language learners. The PALS program at the University of Virginia offered four webinars to VPI+ teachers. Finally, VPI+ coordinators, coaches, and teachers attended the third annual Summit for Early Childhood Professional Development Providers which provided information on new early learning legislation, federal regulations on Child Care Block Grants, and how special education and preschool programs can work together.

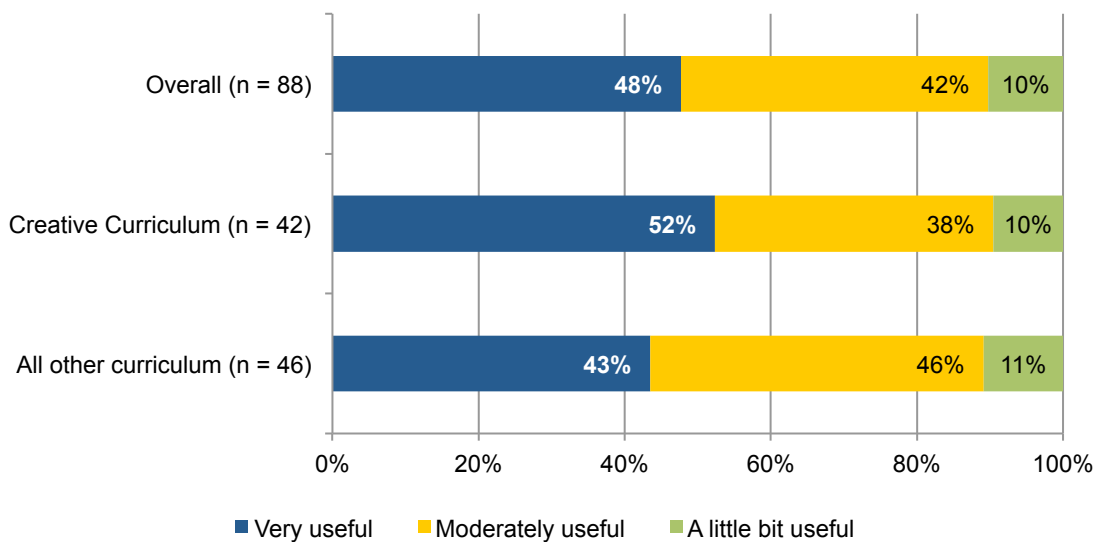
Professional Development and Coaching for VPI+ Teachers

This section provides information about the professional development of VPI+ classroom teachers. The grant requires that each VPI+ teacher completes at least 30 hours of professional development focused on early learning environments and receives up to 40 hours of coaching. In Year 1, VPI+ school divisions provided local professional development through VDOE's procured list of options or through other vendors approved by VDOE. Local coaches provided coaching to teachers.

Training on The Creative Curriculum[®] and other curricula

In August and September 2015, VPI+ school division leaders, teachers, and teaching assistants participated in professional development specific to curriculum implementation. All VPI+ teachers who implemented *The Creative Curriculum[®]* reported having received professional development on the curriculum (e.g., in-person training sessions, online modules, webinars, and coaching). Of the VPI+ teachers implementing a different curriculum, 72% ($n = 46$) reported having received professional development on their curriculum. On average, VPI+ teachers who attended training for *The Creative Curriculum[®]* received twice as many hours of training (14 hours) as teachers using another type of curriculum (7 hours). The majority of VPI+ teachers, regardless of curriculum, perceived the training to be moderately or very useful (Exhibit 19).

Exhibit 19. Perceived Usefulness of Professional Development on Use of Curricula by Curricula

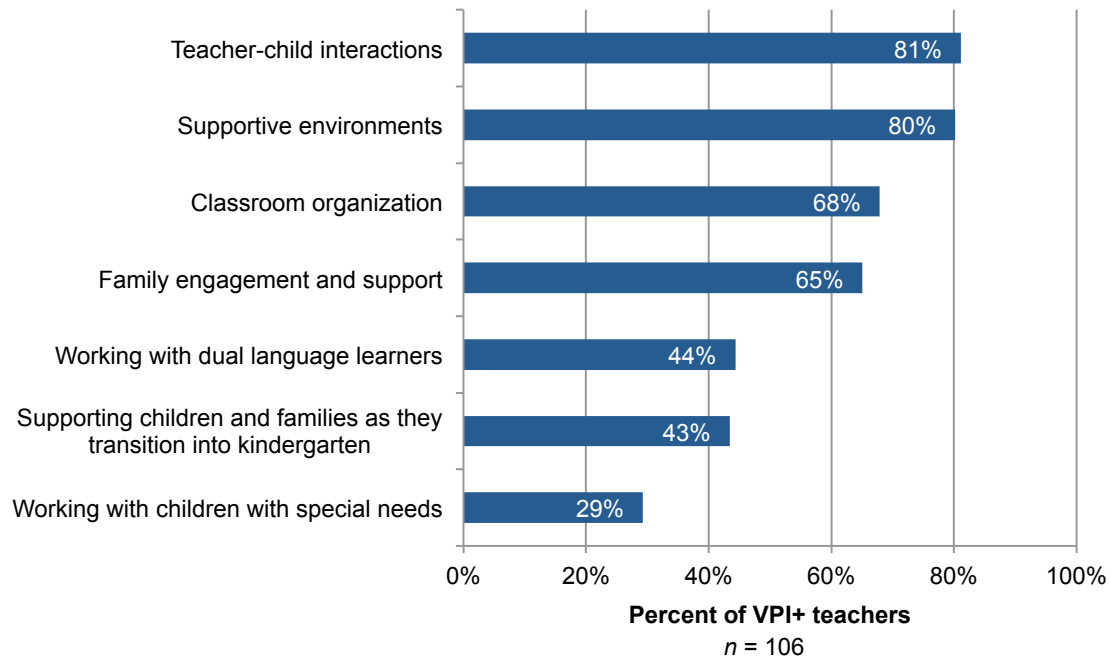


Training on instructional strategies

VPI+ teachers also received professional development (including in-person training sessions, online modules, webinars, and/or coaching) on several instructional strategies (Exhibit 20). The vast majority of VPI+ teachers received professional development on teacher-child interactions and supportive environments (81% and 80%). More than half of VPI+ teachers also received professional development on classroom organization and family engagement and support (68% and 65%). Fewer than half of VPI+ teachers received professional development on working with dual language learners and supporting children’s transition to kindergarten. A small minority of

VPI+ teachers received professional development on working with children with disabilities (29%).

Exhibit 20. Professional Development Received in Specific Instructional Strategies



The vast majority (88% to 91%) of VPI+ teachers found the professional development across all the instructional strategies to be very or moderately useful. Teachers reported that the professional development focused on the teacher-child interactions and supportive environments was particularly useful, and that the professional development around DLLs and family engagement was a little less useful.

Training on GOLD™

Nearly all VPI+ teachers (98%) reported having received professional development (including in-person training sessions, online modules, webinars, and coaching) on GOLD™. The amount of professional development teachers received on GOLD™ varied. Almost a quarter (24%) of VPI+ teachers received 16 or more hours of training on the formative assessment, and an equivalent percentage of VPI+ teachers received 8-15 hours of training. The remaining half (52%) of VPI+ teachers received 7 hours or less of training on GOLD™, with almost a third (30%) having received less than 4 hours (Exhibit 21). Most VPI+ teachers who received at least 8 hours of GOLD™ professional development found it to be very useful, but most teachers who received less than 4 hours finding the training only a little bit useful (Exhibit 22).

Exhibit 21. Hours of Professional Development That VPI+ Teachers Received on GOLD™

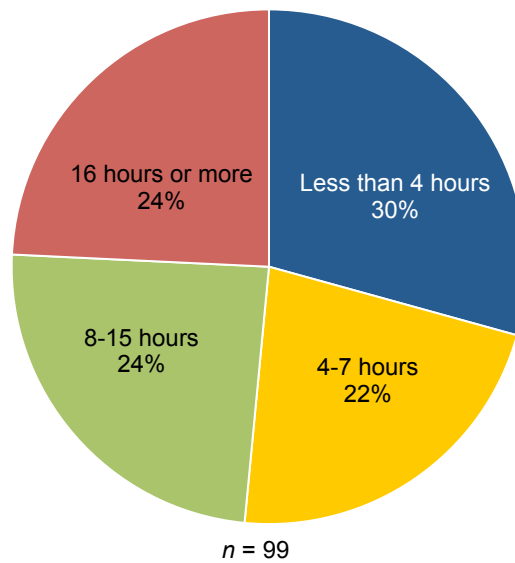
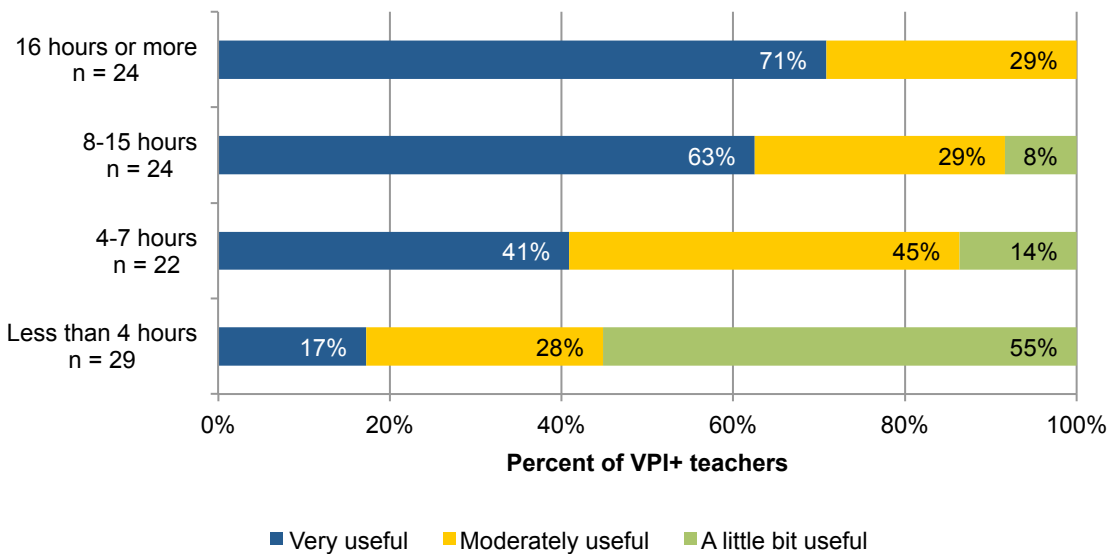


Exhibit 22. Perceived Usefulness of GOLD™ Professional Development by Hours of Training Received



Coaching of VPI+ teachers

To help VPI+ classrooms achieve implementation of all the components of a high-quality preschool program, VPI+ coaches are tasked to help teachers:

- implement evidence-based curricula to target learning in the five essential domains of school readiness (language and literacy, early mathematics and early scientific

development, approaches to learning, physical well-being and motor development, and social and emotional development),

- engage in effective teacher-child interactions, and
- individualize instruction based on formative assessments.

In Year 1, 14 VPI+ coaches supported 115²³ VPI+ teachers.²⁴ On average, each coach was responsible for 17.3 teachers (including both VPI+ and VPI Improved classrooms), but this varied considerably by school division (ranging from 4 to 32 teachers per coach). Some coaches played other roles in their divisions, as well.

Coaches kept an online log of the services they delivered to teaching staff, including the content and intensity (hours) of coaching for individual VPI+ teachers. The coaching log data presented below cover activities that occurred during six weeks in November and December,²⁵ referred to as fall coaching, and between January and May 2016, referred to as spring coaching.

Coaching contacts and intensity. Despite having heavy caseloads, many local coaches made considerable contact with VPI+ teachers in the first year of implementation.²⁶ In most school divisions, the frequency of coaching sessions depended at least partly on teachers' needs.

In the fall, coaches served 75% of teachers in VPI+ classrooms ($n = 85$), averaging 4.4 contacts per VPI+ teacher (2.9 contacts per month) during the 6-week period. Coaches made a total of 374 contacts with teachers in VPI+ classrooms and teachers received, on average, 6 hours of coaching in this six-week timeframe (4 hours per month).

During the second half of the school year, coaches served a greater percentage of VPI+ teachers (83%, $n = 96$) and averaged 12.7 contacts per teacher (2.5 contacts per month). Coaches made 1,218 contacts with teachers in VPI+ classrooms, and on average teachers received 17.9 hours of coaching (3.6 hours per month).

About half of coaching sessions lasted an hour or longer (51% of fall sessions and 48% of spring sessions), and 38% of fall and spring sessions lasted between 30 and 59 minutes. Very few sessions lasted less than half an hour (11% of fall sessions and 13% of spring sessions).

²³ While there were 110 VPI+ classrooms, five classrooms had job-sharing arrangements.

²⁴ Coaches were also responsible for 95 teachers of VPI Improved classrooms that receive a less intensive level of support. This report summarizes only the support provided to VPI+ teachers.

²⁵ Use of the coaching logs was delayed in the 2015-2016 school year by the late start of the evaluation contractor, so coaching activities occurring before November 2015 are not reflected in this report.

²⁶ For the purpose of this report, a coach contact is one session with a particular teacher (e.g., a meeting with a teacher, an extended phone call with a teacher, or a teacher's attendance at a group training).

Coaches supported teachers through three types of contacts: (1) working with them in classrooms, (2) holding individualized coaching sessions in-person or by phone, and (3) facilitating group trainings. Coaches most frequently worked with teachers in their classrooms while students were present (54% of fall contacts and 44% of spring contacts), followed by meeting teachers before or after class when students were not present (26% of fall contacts and 34% of spring contacts). Group trainings occurred less frequently (20% of fall contacts and 22% of spring contacts). In both fall and spring, coaches spent slightly less than an hour with teachers during both in-class and before or after class coaching sessions. Group trainings, in contrast, lasted about three hours, on average, during both time periods.

Coaching strategies. Coaches used a variety of coaching strategies when working individually with teachers (Exhibit 23). The distribution of strategies across coaching contacts was similar in fall and spring. Observation was the most frequency used strategy, occurring in more than 40% of coaching contacts. More than a third of contacts included discussion, and more than a fourth included modeling. Fewer contacts included providing resources and materials not connected to the curriculum, drawing connections between the curriculum and materials, and data and video review.

Exhibit 23. Coaching Strategies for Individual Coaching Contacts With VPI+ Teachers*

	FALL Number of contacts	FALL Percent of contacts	SPRING Number of contacts	SPRING Percent of contacts
Observation	129	43%	452	47%
Discussion	106	35%	378	40%
Modeling	91	30%	239	25%
Providing resources and materials (not connected to curriculum)	59	20%	213	22%
Connection to curriculum and materials	58	19%	205	21%
Data review	52	17%	168	18%
Video review	4	1%	71	7%
Other strategy	26	9%	57	6%
None specified	4	1%	8	1%

*A given contact could include multiple strategies.

Coaching focus. Coaches had some discretion over the content of the topics they covered with teachers, and in a few school divisions, teachers had some input into the coaching topics as

well. According to VPI+ coordinators, coaches designed some aspects of their coaching specifically to meet individual teachers' needs.

Coaches addressed a variety of focus areas in individual coaching and group trainings with teachers (Exhibit 24). A given contact could include work on more than one focus area. In most of their contacts with teachers (about 80%), coaches addressed domain-specific topics (i.e., the five essential domains of school readiness). About half as many sessions included a focus on teacher-child interactions, and close to a third of coaching contacts overall addressed supportive environments. Fewer coaching contacts involved collecting and using assessment data, family engagement, and supporting children with special needs and who are DLLs.

Exhibit 24. Individual Coaching and Group Training Contacts with VPI+ Teachers by Focus Area

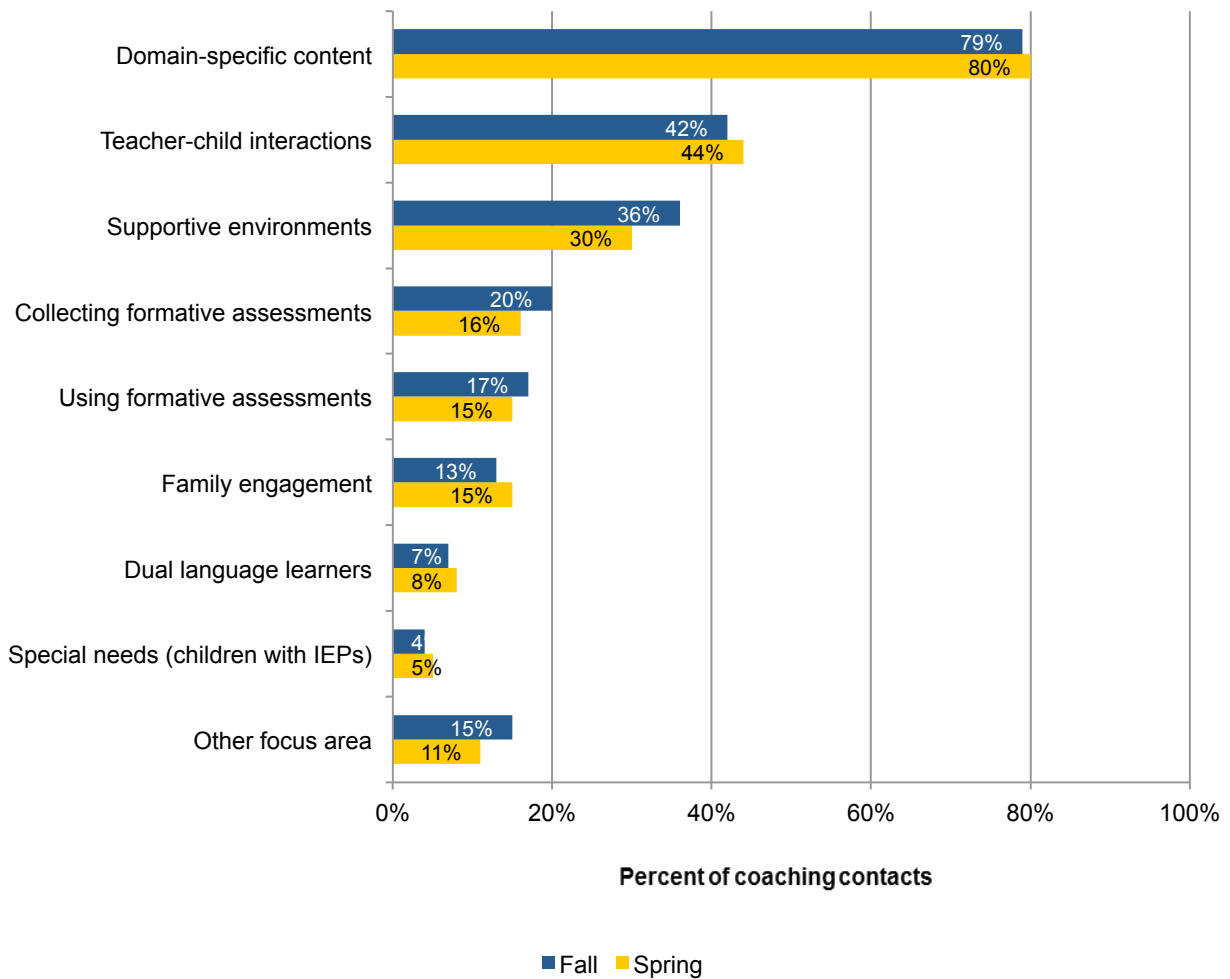
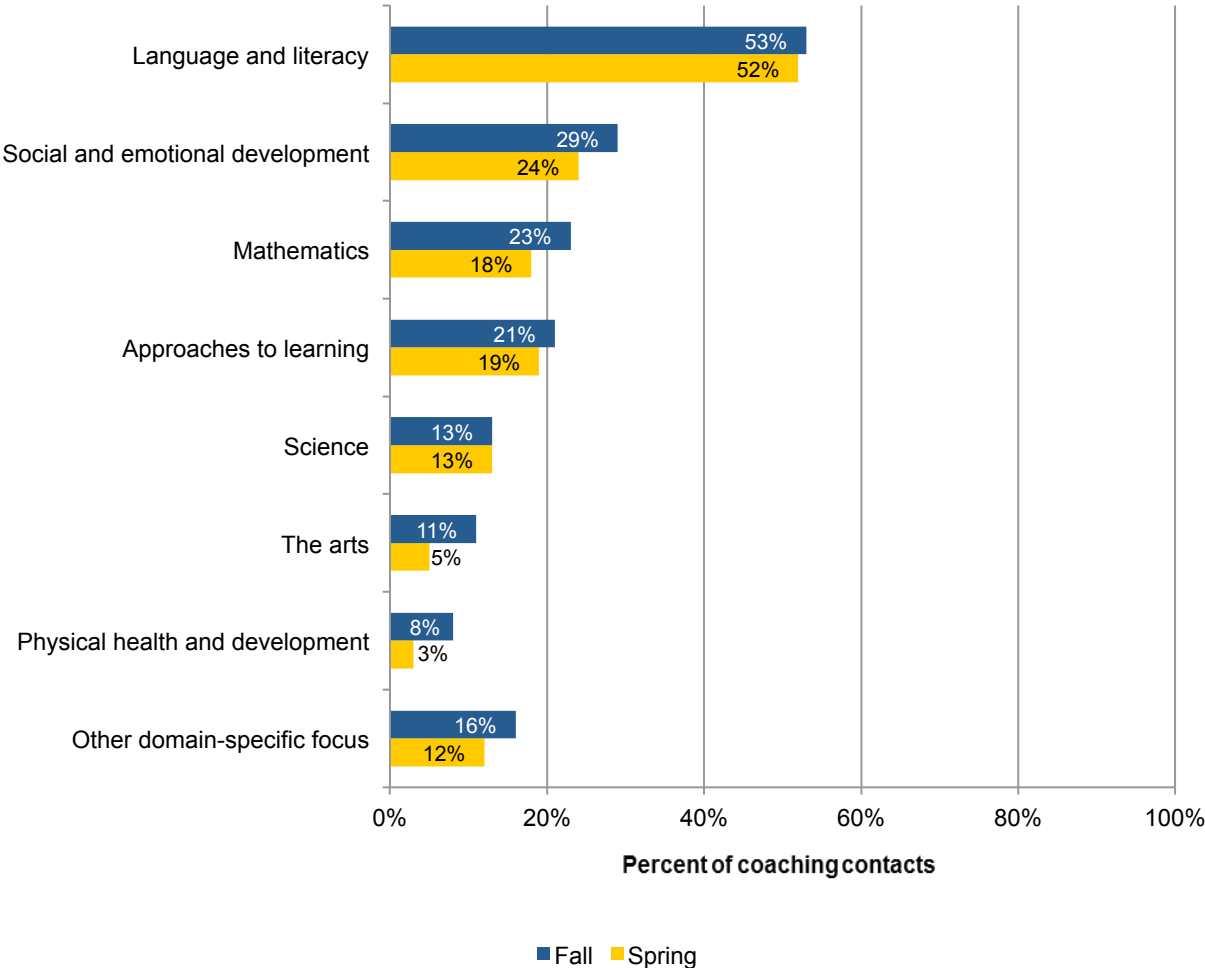


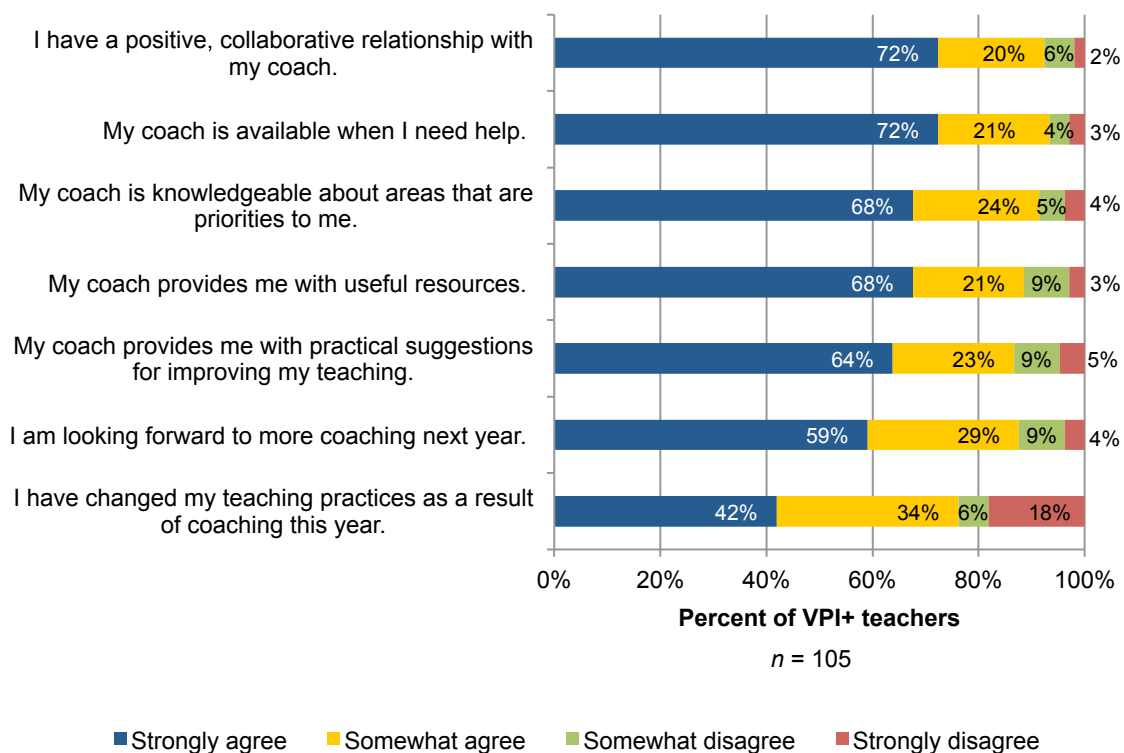
Exhibit 25 provides additional detail on the domain-specific focus areas, showing the percentage of coaching contacts that incorporated each of the five essential domains of school readiness. About half of coaching sessions included language and literacy, which was the most frequently addressed domain. This emphasis was consistent with the high dosage of language and literacy activities that teachers were providing in their classrooms, as discussed in the Program Implementation and Quality chapter. Social and emotional development was the next most frequent topic, addressed by coaches in 29% of fall contacts and 24% of spring contacts. Coaches also spent some time with VPI+ teachers addressing approaches to learning and mathematics, but relatively little time on the arts or physical health and development.

Exhibit 25. Individual Coaching and Group Training Contacts with VPI+ Teachers Incorporating Domain-Specific Focus Areas



Teachers’ perceived usefulness of coaching. Most school divisions offered coaching for teachers for the first time during the 2015—2016 school year, and teachers generally expressed high satisfaction with this additional support (Exhibit 26). For example, teacher surveys conducted in spring 2016 found that the vast majority of VPI+ teachers either strongly or somewhat agreed that they had a positive relationship with their coach and that they were looking forward to more coaching next year. A vast majority of teachers also strongly or somewhat agreed that their coaches were available when they needed help, were knowledgeable about priority areas, and provided useful resources and practical suggestions for improving teaching. Fewer, but still a majority, of VPI+ teachers strongly or somewhat agreed that coaching during the initial year of VPI+ implementation had changed their teaching practices.

Exhibit 26. VPI+ Teachers’ Perceptions of Coaching



Teachers’ written comments supported their ratings of the VPI+ coaching, with several teachers considering their experiences with their coaches to be the greatest success of VPI+. Teachers appreciated coach feedback and ideas, that coaches listened to their concerns, and that coaches were able to encourage reflection and growth as a teacher.

5. Child Outcomes

This chapter examines whether VPI+ children made significant gains in school readiness skills from fall to spring during the 2015–2016 school year, the first year of the VPI+ program. For each domain, we first examine whether the gains were significant for the entire sample of children for whom there are data from the fall and spring. We then look at whether the gains were smaller or larger, for the different subgroups of interest, including gender, race/ethnicity, having an Individualized Education Program (IEP) or identified disability, being a dual language learner (DLL) as defined by parent-reported home language, being at or below 100% of the FPL, and being in poor or fair health as rated by teachers. Finally, we examine whether days of attendance as a proxy for dosage were associated with gains in school readiness skills.

Sample Assessed Both Fall and Spring

Below, we present the fall to spring growth analysis for children for whom there were summative assessment data at both time points.²⁷ A description of the demographics of the 1,551 children assessed in both the fall and spring is presented in Chapter 2.

Analysis Approach

To answer the question of whether participating VPI+ children made gains in school readiness overall during Year 1 and to examine differential gains for the subgroups of interest, we conducted a series of three-level hierarchical linear models (HLMs) (Raudenbush & Bryk, 2002) with test scores in four domains. Assessment observations (fall or spring assessment data) were nested within students, and students were nested within classrooms, with division included as a fixed effect. This approach allowed us to examine whether growth was significant for the entire sample of children for each measure, and then to examine whether growth was significantly different (more or less) for children with and without certain characteristics or risk factors. See Appendix B for a more detailed description of how the analyses were conducted.

²⁷ The state sample size is larger for PALS-PreK scores because teachers administered the assessment to all children per the state requirement whereas SRI followed a sampling approach for the direct assessments and teacher ratings in one large division (Henrico) in the fall. At the beginning of SRI's contract, there was confusion about whether all children in Henrico (i.e., children funded by VPI+, VPI improved, Head Start, and Title 1) were to be included in the evaluation. During the spring assessment, all eligible children across Henrico's preschool classrooms were identified as VPI+ students per VDOE and the division, so all children were assessed. To be included in the analyses in this report, children's assessment results had to be available from both the fall and spring.

Fall to Spring Gains

Children made significant gains from fall to spring across all domains: Literacy, Math, Approaches to Learning, and Social and Emotional Development, as well as an assessment of gross and fine motor skills, although for some of the areas, the gains were small. Below we present the overall findings for measured skills in each domain, and any significant findings for gender, race/ethnicity, DLL status, IEP status, poverty status, and health status. We also examined the relationship between high attendance (defined as 80% or more of the days offered) and gains on the outcome measures.

Literacy skills (PALS-PreK): overall and by subgroups

VPI+ children overall experienced significant gains from fall to spring across all PALS-PreK literacy skills. More than 80% of four-year-old-children entered their VPI+ preschool year with limited early literacy skills and finished the year within expected developmental ranges across all the skills (see Appendix C for PALS-PreK expected developmental ranges). Further, all subgroups of children made significant gains from fall to spring. However, some subgroups of children entered VPI+ with lower skills than other children, and in some cases, made greater gains over the course of the school year. Specifically, when we examined each PALS-PreK literacy skill separately by subgroup, we found the following:

- **Upper-Case Alphabet Recognition.** DLL children started with significantly lower scores than non-DLL children, but made significantly greater gains. Likewise, children from households at or below 100% FPL started with significantly lower scores than children from households between 101% and 200% of the FPL, but made significantly greater gains. Black children started with significantly higher scores but made significantly less gains than White children.
- **Beginning Sound Awareness.** DLL children started with significantly lower scores compared with non-DLL children, but made significantly greater gains. Hispanic children started with significantly lower scores, but made significantly greater gains than White children.
- **Name Writing.** DLL children started with significantly lower scores than non-DLL children but made significantly greater gains. Also, children from households at or below 100% of the federal poverty level (FPL) started significantly lower than children from households between 101% and 200% of the FPL, but made significantly greater gains. Also, boys started with significantly lower scores but made significantly greater gains

than girls. Conversely, Black children started with significantly higher scores but made significantly less gains than White children.

- **Print and Word Awareness.** DLL children started with significantly lower scores compared with non-DLL children, but made significantly greater gains. Hispanic children started significantly lower on print and word awareness, but made significantly greater gains than White children.
- **Rhyme Awareness.** There were no statistical differences in gains by subgroup.
- **Nursery Rhyme Awareness.** DLL children started with significantly lower scores compared with non-DLL children, but made significantly greater gains. Hispanic children started with significantly lower scores, but made significantly greater gains than White children.

These data are also displayed in exhibits 27 to 32. These significant gains may reflect the targeted focus of literacy in VPI+ programs. As discussed in the Program Implementation and Quality chapter, a vast majority of teachers reported spending time every day building and supporting literacy skills. In addition, these are discrete skills that are relatively easy to teach (e.g., upper case letter recognition). It is encouraging that children who have an IEP, are DLL, or are at or below 100% FPL are making similar or greater gains from fall to spring as children who do not have an IEP, are not DLL, and who are between 101% and 200% FPL.

Exhibit 27. Gains on the PALS PreK Upper-Case Alphabet Recognition from Fall 2015 to Spring 2016, By Subgroups

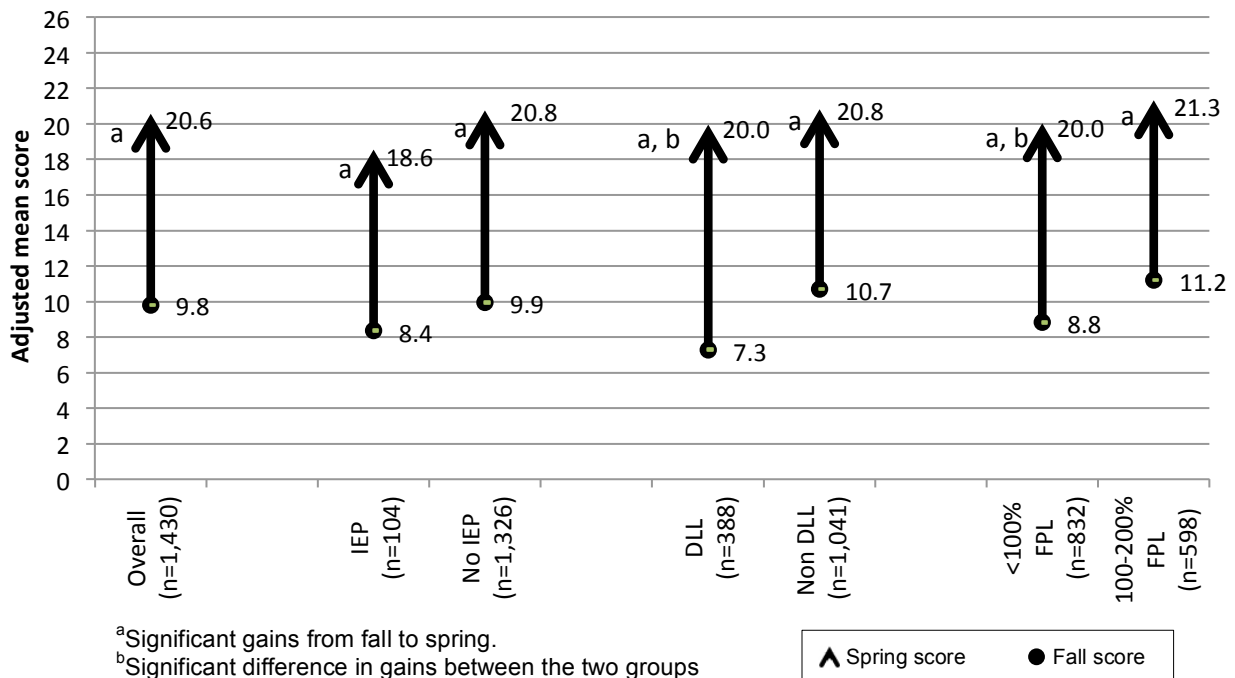


Exhibit 28. Gains on the PALS PreK Beginning Sound Awareness from Fall 2015 to Spring 2016, By Subgroups

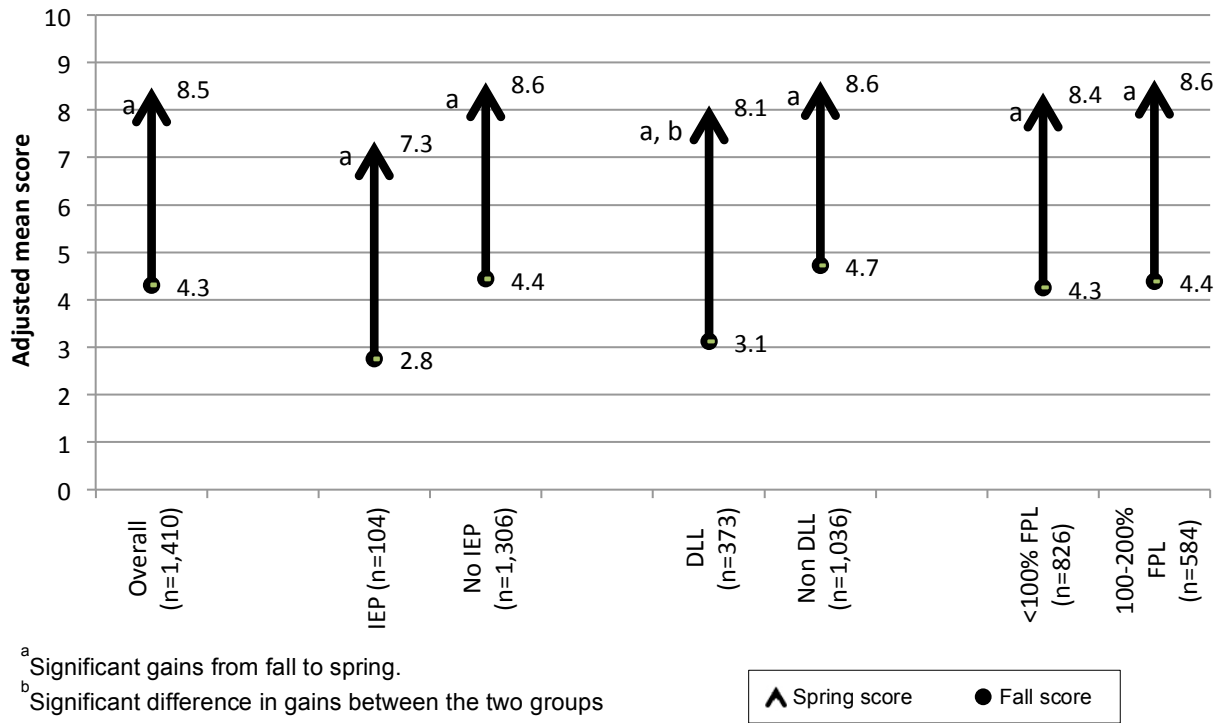


Exhibit 29. Gains on the PALS PreK Name Writing from Fall 2015 to Spring 2016, By Subgroups

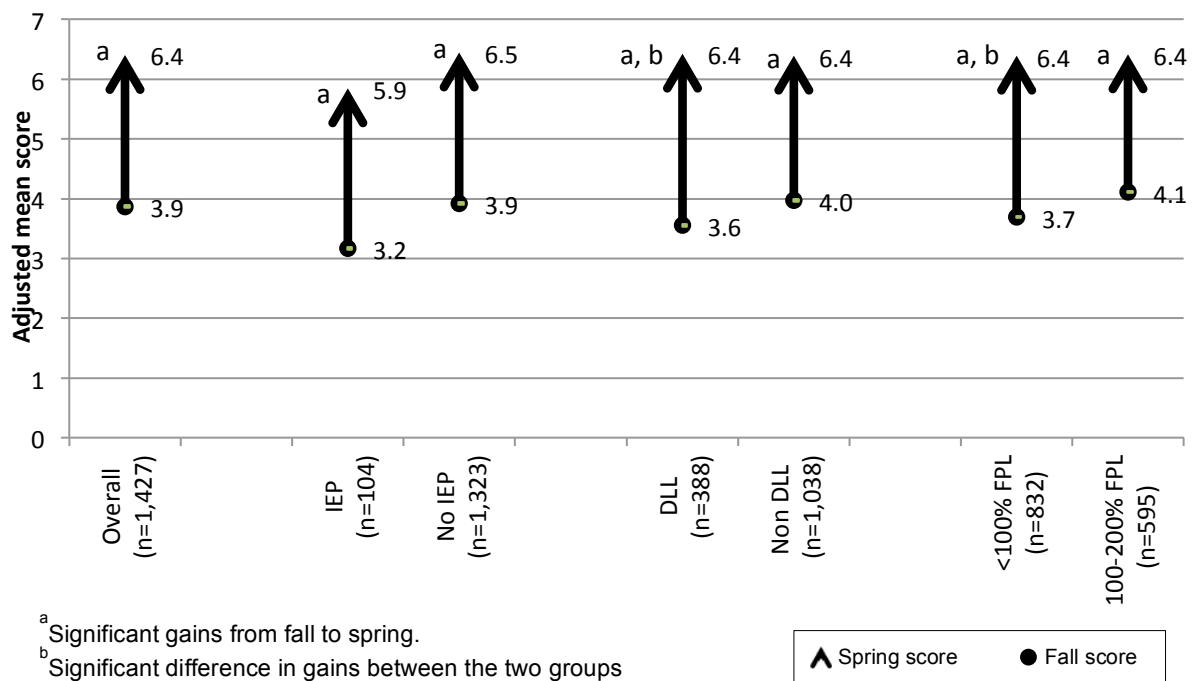


Exhibit 30. Gains on the PALS PreK Print and Word Awareness from Fall 2015 to Spring 2016, By Subgroups

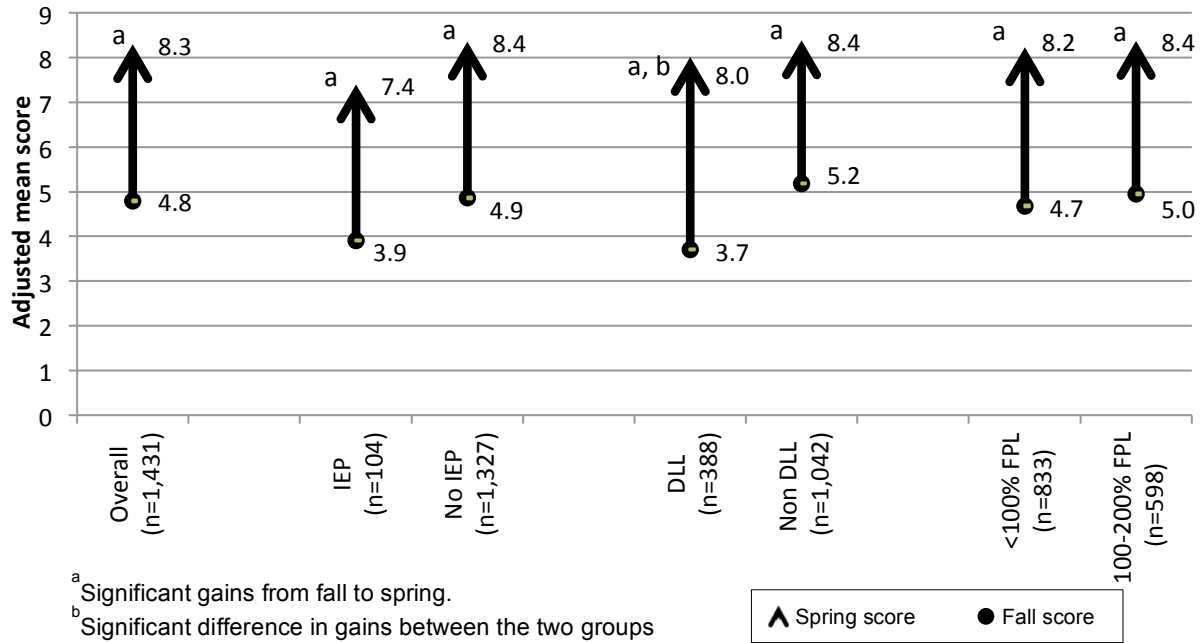


Exhibit 31. Gains on the PALS PreK Rhyme Awareness from Fall 2015 to Spring 2016, By Subgroups

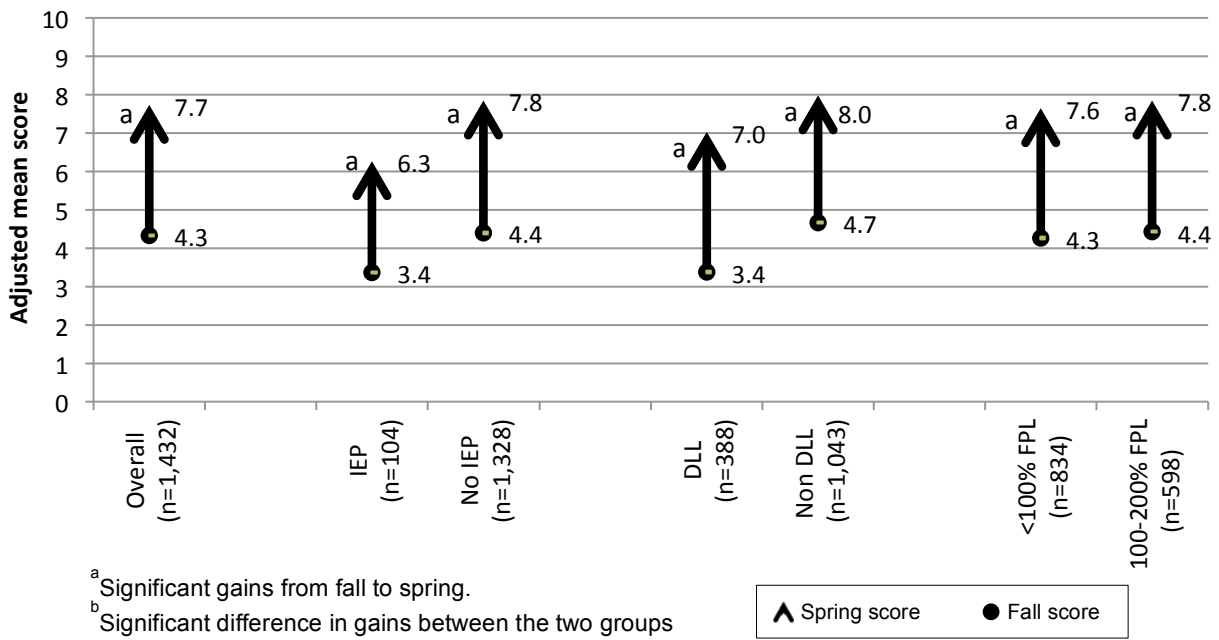
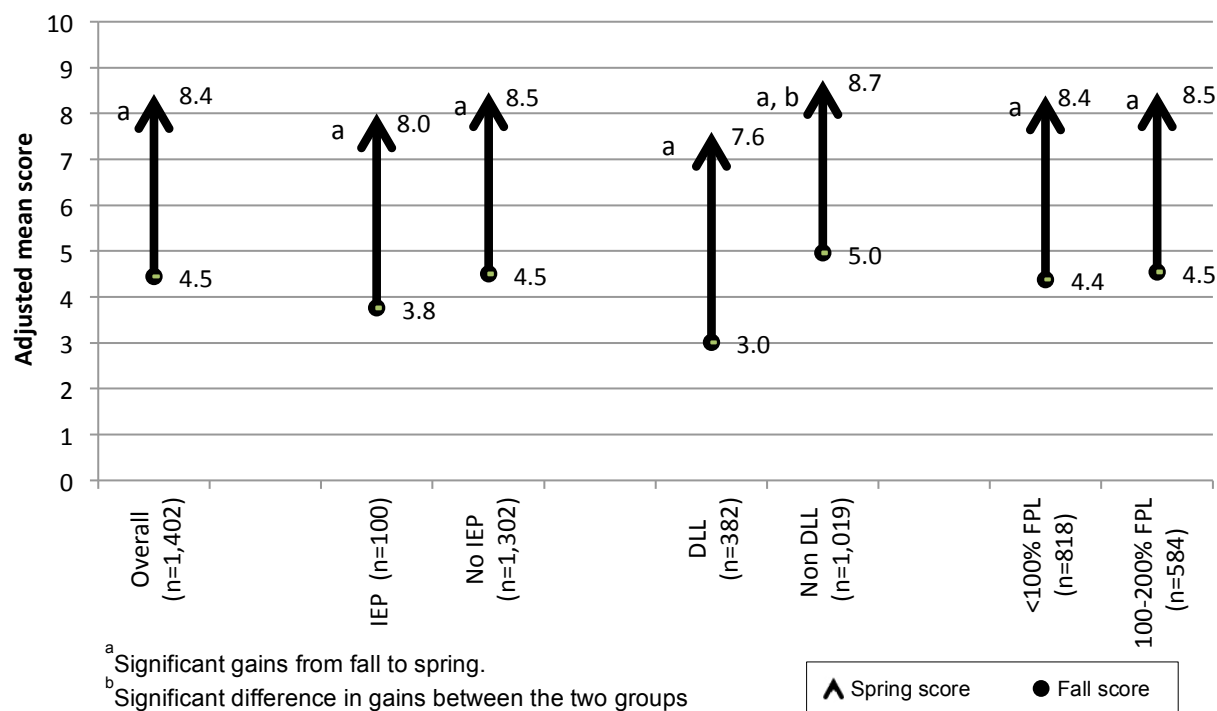


Exhibit 32. Gains on the PALS PreK Nursery Rhyme Awareness from Fall 2015 to Spring 2016, By Subgroups

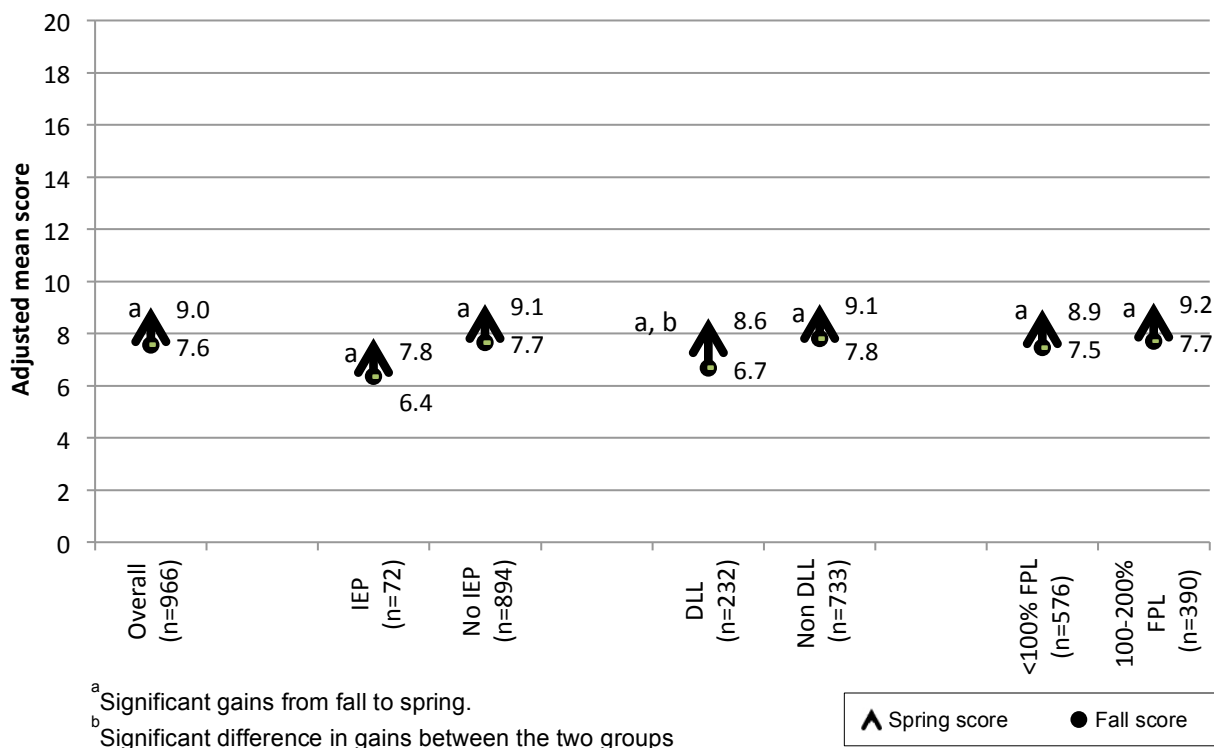


General knowledge and cognition, overall and by subgroups

To measure cognition, the evaluation examined growth in early math skills using the Woodcock-Johnson® III Applied Problems subtest and cognitive flexibility skills using the Dimensional Change Card Sort (DCCS). VPI+ children experienced significant gains on the Applied Problems subtest of early math skills between fall and spring based on raw sum scores (although the gains are small), but not based on standard scores that adjusted results based on children’s age. Standard scores have a mean of 100 and a standard deviation of 15. The norms for performance increase as children become older, such that a raw score of 10 might translate to a standard score of 100 for a four-year-old but a standard score of 80 for a five-year-old. VPI+ children increased an average of 1.5 points on their raw sum scores, and DLL children started VPI+ with significantly lower scores than non-DLL children, but made significantly greater gains (Exhibit 33). Yet, once scores were converted into standard scores, the gain was no longer significant. Overall, the mean standard score for the VPI+ sample was 100.8 in the fall and 101.1 in the spring. This gain was not statistically significantly different from zero. About half

(52%) of the children scored at or above the mean standard score in the fall and 55% of the children scored at or above the mean standard score in the spring.²⁸

Exhibit 33. Gains on the Applied Problems Subtest Sum Raw Scores from Fall 2015 to Spring 2016, By Subgroups

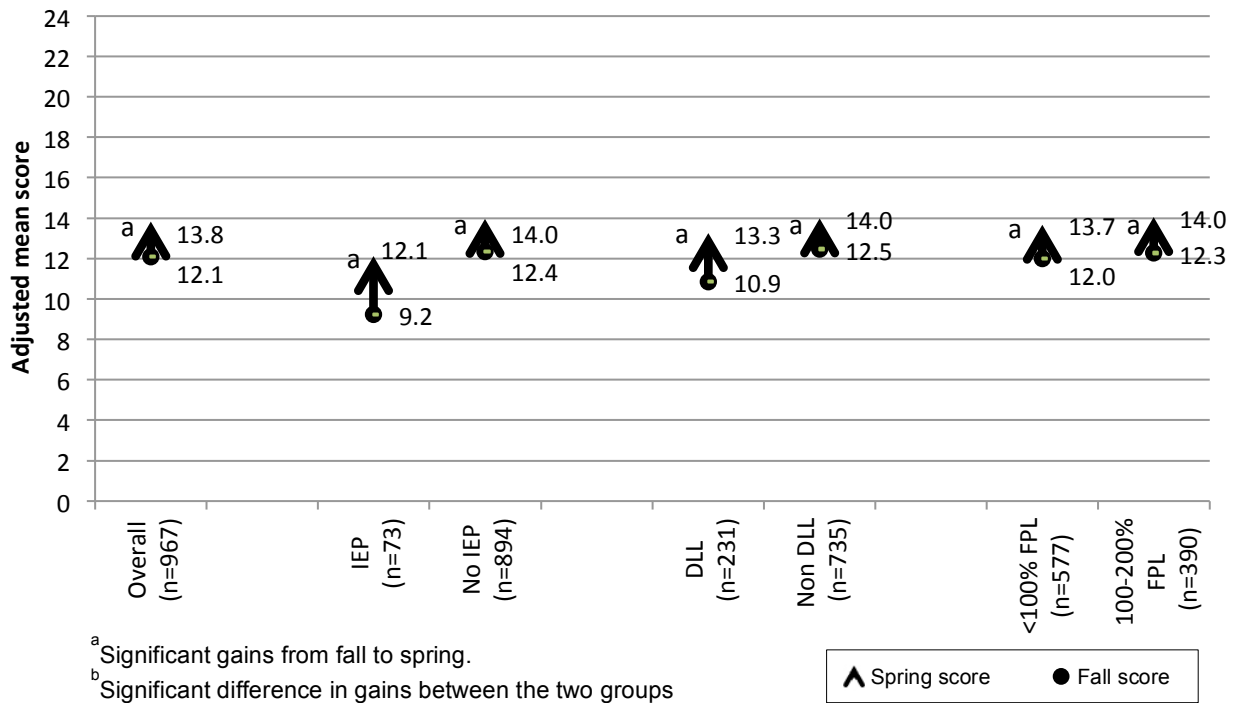


It is important to note that the Applied Problems subtest only assesses a limited set of math concepts (i.e., number sense, counting skills, simple addition). Still, these data suggest children are entering the VPI+ program with at least some basic knowledge of counting, and are showing small gains in their knowledge across the year. Divisions may want to consider seeking additional resources to support math instruction across classrooms, and additional PD supports could benefit VPI+ teachers to support increased math learning and early math skills across an even wider range of skills.

²⁸ For norm-referenced tests like Applied Problems, you would expect in a nationally representative sample that about half of the population would score below the mean of 100 and about half of the population would score above the mean.

On the DCCS task, which measures children’s ability to shift their attention, VPI+ children also experienced significant gains from fall to spring (Exhibit 34). There were no significant differences among subgroups of children on the size of gains made on the DCCS.

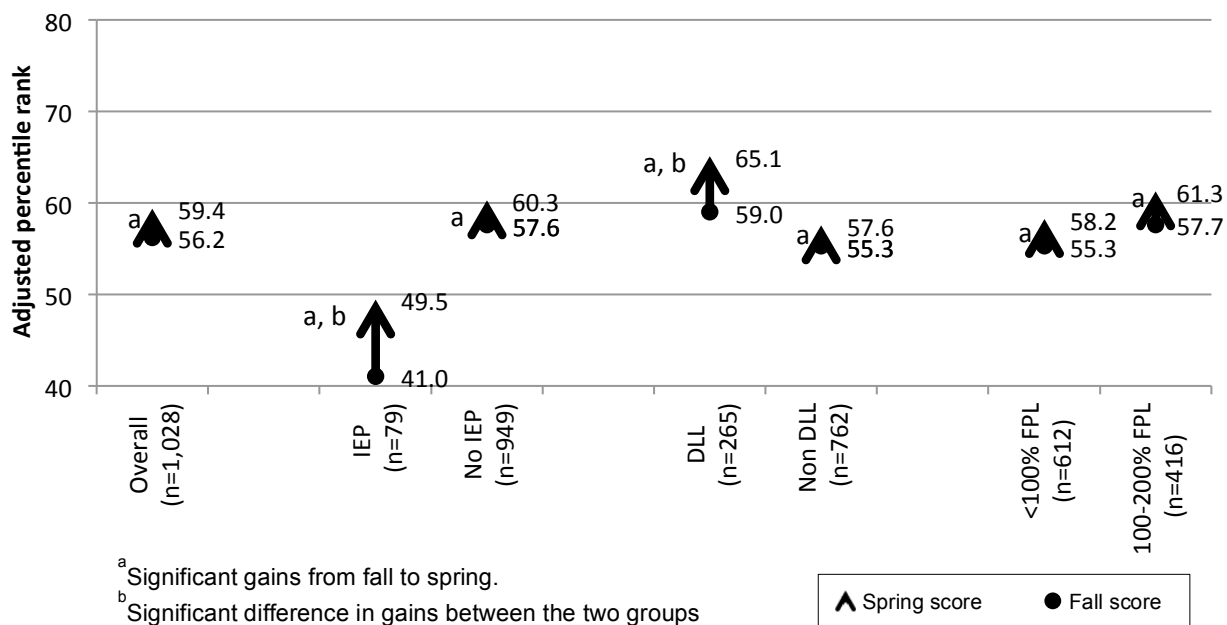
Exhibit 34. Gains on the DCCS Task from Fall 2015 to Spring 2016, By Subgroups



Approaches to learning, overall and by subgroups

We used the teacher-reported **task orientation** subscale of the T-CRS 2.1 to assess gains in the approaches to learning domain. Teachers were asked to rate the children’s enjoyment in learning, task persistence, and curiosity levels, especially when confronted with new skills or tasks. In examining the average percentile rank in the fall and spring, we found significant gains overall (from a 56.2 percentile rank to a 59.4 percentile rank). Children in poor health and Black children did not show significant gains. In addition, DLL children made significantly greater gains on this measure than non-DLL children. Interestingly, this was the only measure on which children with an IEP started with significantly lower scores but made significantly greater gains than children without an IEP (Exhibit 35).

Exhibit 35. Gains on the T-CRS 2.1 Task Orientation Scale from Fall 2015 to Spring 2016, By Subgroups

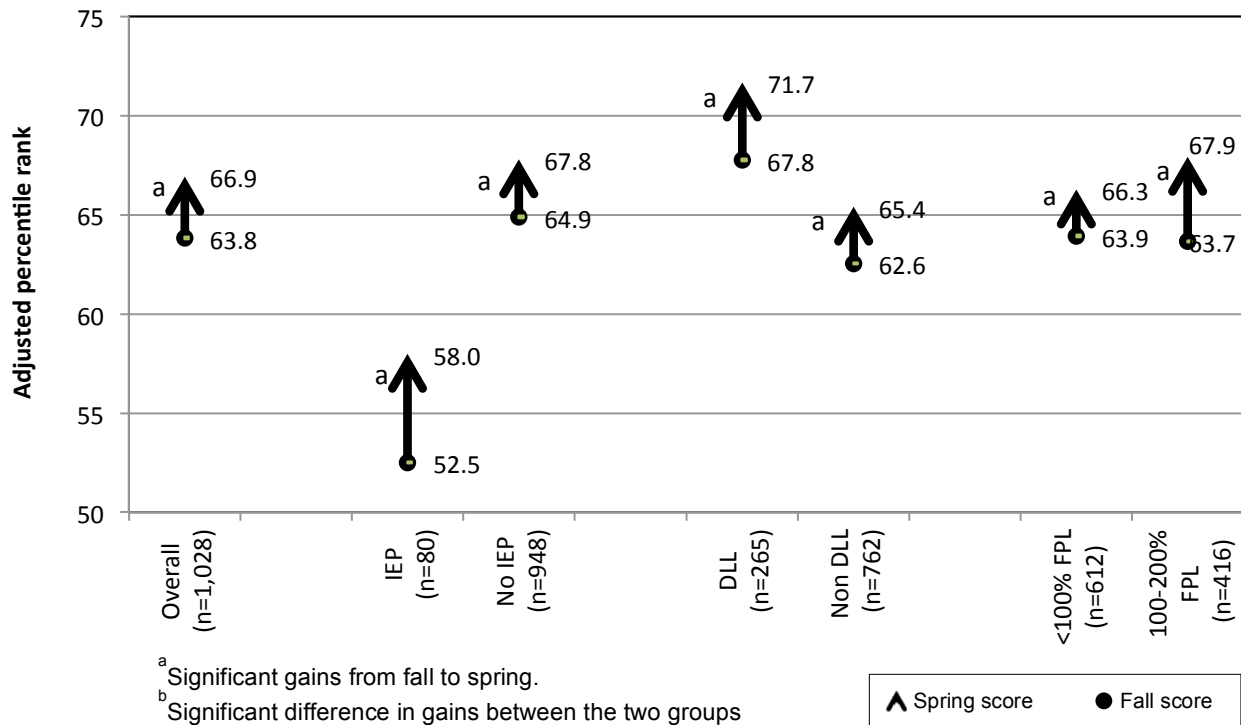


Social and emotional development, overall and by subgroups

To measure gains in children’s social and emotional development, we again used the teacher-reported T-CRS 2.1 to measure children’s ability to get along with others (Peer Social Skills subscale) and children’s ability to regulate their emotions and frustrations (Behavior Control subscale), and we used the HTKS task to measure self-regulation. The T-CRS 2.1 subscales are scored such that higher scores reflect better functioning, with higher percentile ranks on peer social skills indicating getting along well with others and higher percentile ranks on behavior control indicating less acting out and defiance.

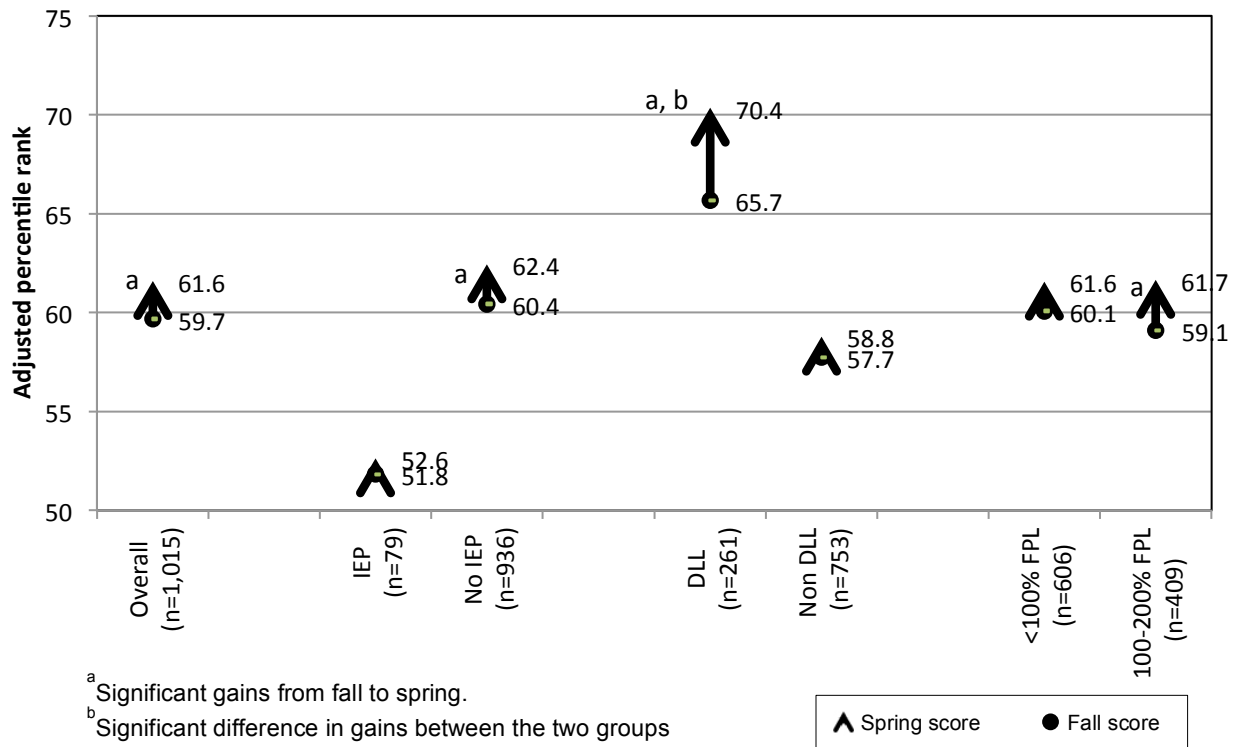
VPI+ children overall and in all subgroups experienced small but significant increases in their peer social skills from fall to spring, with the exception of children in poor or fair health who did not demonstrate statistically significant gains.

Exhibit 36. Gains on the T-CRS 2.1 Peer Social Skills Scale from Fall 2015 to Spring 2016, By Subgroups



VPI+ children’s behavioral control skills increased significantly from fall to spring overall, although most subgroups did not demonstrate significant increases, including non-DLL children, children with IEPs, children at or below 100% FPL, boys, Black children, and White children. In contrast, DLL children both started significantly higher on behavior control (meaning children had fewer problems) in the fall and made significantly greater gains from fall to spring compared with non-DLL children.

Exhibit 37. Gains on the T-CRS 2.1 Behavior Control from Fall 2015 to Spring 2016, By Subgroups

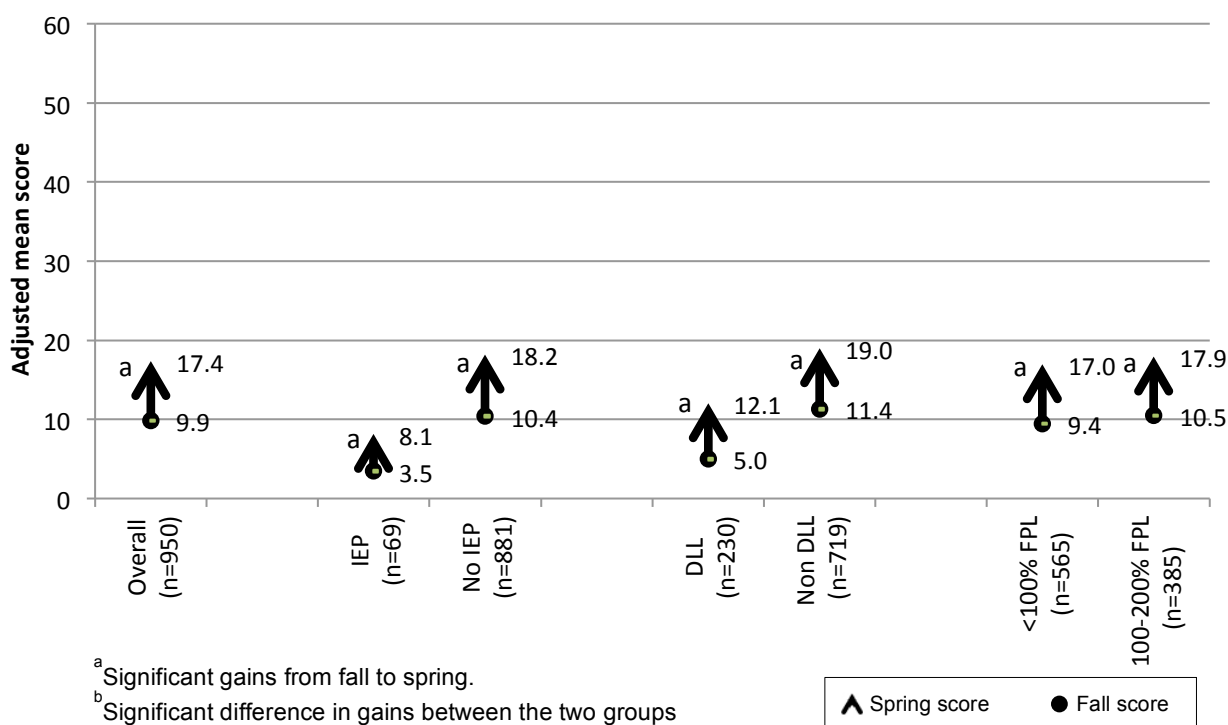


VPI+ children’s self-regulation skills on the HTKS task increased significantly from fall to spring overall, with mean scores increasing from 9.9 to 17.4. These scores are similar to other published findings of preschool children’s self-regulation as measured by the HTKS (McClelland et al., 2007).²⁹ These gains also are in line with developmental expectations in that most children’s ability to inhibit behavior when needed increases with age, and most children’s working memory increases during this period—skills that are both necessary to complete the HTKS task.

In general, there were no significant differences among subgroups on children’s gains on self-regulation. The only exception was that boys made significantly less gains than girls from fall to spring.

²⁹ In a recent study conducted in the U.S. (Schmitt, Pratt, & McClelland, 2014), the mean score for an older group of children (mean age = 61 months) in the spring of preschool was 23.03 ($n = 247$). Similarly, McClelland and colleagues (2014) found a mean score of 17.38 (fall) and 24.73 (spring) in a sample of 4 to 5 year olds in preschool (mean age = 55 months in the fall of preschool).

Exhibit 38. Gains on the HTKS Task from Fall 2015 to Spring 2016, By Subgroups



Motor skills by subgroups

Based on teacher-reports of gross and fine motor skills, very few children were rated as not proficient in gross motor skills. Teachers reported that almost all their VPI+ children ran, jumped, and held a pencil properly by the end of the year (Exhibit 39). In the fall, teachers rated about three-fourths of children as proficient on all 3 motor skills, whereas by spring nine out of 10 children were proficient on all three skills.

Exhibit 39. Percentage of Children Rated as Proficient in Motor Skills (Teacher-Report)

	Fall 2015	Spring 2016
Gross Motor Skills: Run without difficulty (n = 1,022)	98%	99%
Gross Motor Skills: Jumped and landed with both feet (n = 970)	95%	98%
Fine Motor Skills: Hold a pencil properly (n = 1,007)	77%	91%

Attendance

We did not find any significant relationships between days of attendance and gains on any of the academic outcome measures (i.e., literacy or early math) with the exception of nursery rhyme awareness, where children who attended 80% or more of the days started significantly

higher, but made fewer gains.³⁰ We also found no relationship was observed between attendance and DCCS task performance.

However, we did find that children who attended more days of school showed greater gains on non-academic measures (i.e., social skills, behavior control). In fact, children with better attendance (i.e., attended 80% or more days) increased 3.9 more percentile rank points on task orientation, 4.9 more percentile rank points on peer social skills, and 2.9 more percentile rank points on behavior control than children who attended less than 80% of the 180 VPI+ school days.

Limitations

While the Year 1 findings document significant growth for VPI+ children between fall and spring, without a comparison group, we do not know to what extent these gains can be attributed to development alone and what portion of these gains can be attributed to children's experience in VPI+ classrooms. Also, it is important to note that assessments are limited in their scope and precision, as most measures were developed to be brief, standard assessments for research purposes and not developed to be authentic measures of the skills and abilities children have across domains.

³⁰ Interestingly, we found that children who began the year with higher skills on academic measures (i.e., literacy and math) attended more days of school indicating other important factors could be contributing to both attendance and academic skills.

6. Conclusion

VPI+ state and local partners accomplished a great deal during the first year of the grant. Through intensive recruitment efforts, VPI+ staff enrolled more than 1,600 children into new or blended VPI+ classrooms. VPI+ staff and teachers received extensive professional development in many formats that, overall, VPI+ teachers found to be useful and effective in improving their teaching practices. With strong support from family engagement coordinators, a large number of children enrolled in VPI+ programs and their families had readily available access to a wide range of local comprehensive services. Finally, child outcomes data revealed that VPI+ children, overall, and across several subgroups, made significant gains from fall to spring on measures of literacy, mathematics, approaches to learning, social and emotional development, and motor skills, although growth in some areas was small. In particular, VPI+ children experienced significant gains across all six PALS-PreK literacy skills analyzed. In the cognitive domain, VPI+ children experienced small but significant gains in early math and ability to shift their attention. In the domain of approaches to learning, VPI+ children increased significantly their task orientation skills. VPI+ children also experienced significant but small growth in social emotional skills in the areas of peer social skills and behavior control, and significant but moderate gains on the measure of self-regulation.

The findings suggest that VPI+ supported positive outcomes for children in subgroups who tended to begin preschool with lower scores on some skills. For example, school readiness skills among DLL children were lower in the fall, but the gain was greater compared with their non-DLL peers, especially in literacy and early math. Similar gains were found for children whether they had or did not have an IEP, although children with IEPs tended to start with lower scores. Growth also occurred for children from households at or below 100% FPL. Children living at or below 100% FPL tended to start in the fall with lower literacy scores but made greater gains on some literacy skills than children living in homes between 100-200% FPL.

In addition to these accomplishments, there are some findings about VPI+ implementation and impact that suggest potential targets for further strengthening during Year 2 of the grant.

Potential Targets for Program Improvement

VPI+ programs successfully enrolled many children in Year 1, but enrollment of some children came relatively late in the school year, which may have affected children's overall attendance. Given the relationship between dosage of programming and outcomes, VPI+ programs should attempt to recruit and enroll children early in the year and encourage consistent attendance.

A major focus of Year 1 was on training the teachers who implemented VPI+ in classrooms. In general, teachers found the professional development for VPI+ to be useful, but some coordinators felt that more training was needed. Nearly all VPI+ teachers received professional development on implementing their VPI+ program's curriculum, collecting and analyzing data using *GOLD*[™], various instructional strategies, and school readiness domains. Teachers generally reported feeling prepared and confident to implement the various components of VPI+. However some division coordinators felt that additional teacher training would improve implementation, particularly in regard to *The Creative Curriculum*[®], which was new to the vast majority of teachers who implemented it, and *GOLD*[™]. In addition, divisions could consider developing and promoting processes to monitor fidelity of implementation.

There are some other content areas and strategies that could be further addressed in teachers' training and technical assistance. The formative evaluation revealed that teachers focused heavily on building language and literacy skills in the classroom, which aligned with coaches' emphasis on the topic. Also, the summative child assessment results suggest less growth in the areas of math and social development skills than literacy skills. In the future, teachers could benefit from more training on other school readiness domains, such as social-emotional development and mathematics.

In Year 1, relatively few teachers received training focused on working with DLL children or children with special needs, and teachers were less likely to report benefits of using *GOLD*[™] to assess and target instruction for children from these populations. Future coaching and other professional development activities could provide more support to teachers in this area. Likewise, very few coaching sessions included information for teachers on assessment or on engaging families, an area that many teachers found to be challenging.

Next Steps for the VPI+ Program and Evaluation

With support from state VPI+ partners (including CASTL, VECF, VDOE, and the evaluation team) the school divisions are now working on specific program improvement and professional development efforts using data from the QRIS, formative assessments, and summative assessments. State-level VPI+ leadership is working with school divisions around issues such as recruitment of eligible children, data collection and reporting, and fidelity of program implementation. School divisions are also launching Year 2 of the VPI+ program, including expansion of the program to more classrooms.

In Year 2 of VPI+, the evaluation will continue to collect formative and summative assessment data to provide feedback to improve instruction and program implementation. During Years 3 and 4, the evaluation will conduct a Regression Discontinuity Design (RDD) to measure the impact of VPI+ on children's school readiness at kindergarten. Also in Years 3 and 4, the evaluation will begin a longitudinal study that compares VPI+ participants and a matched-comparison group of children in Kindergarten who did not receive formal preschool but are similar to the VPI+ participants on school readiness outcomes, participation in special education, grade retention, attendance, and achievement in kindergarten and first grade. Finally, the evaluation will examine variation in program impacts by student demographics, program type, dosage (i.e., attendance), implementation, and quality.

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Appendix A: Additional Information on the Child Summative Assessment Measures

Measure	Reliability ³¹	Validity ³²	Direct assessment (DA) or teacher report (TR) ³³	Measures variation in children's abilities ³⁴	Appropriate for children in diverse communities	Align with Foundation Blocks for Early Learning and SOL for kindergarten	Norm-referenced ³⁵
PALS-PreK	Yes	Yes	DA administered by teachers	Yes	Yes	Yes	Yes
WJIII-R Applied Problems subtest	Yes	Yes	DA	Limited	Yes	No ³⁶	Yes
DCCS	Yes	Yes	DA	Floor effects	Yes	No	No
T-CRS:2 Task orientation subscale	Yes ³⁷	Yes	TR	Yes	Yes	Yes ³⁸	Yes
T-CRS:2 Peer social skills	Yes	Yes	TR	Yes	Yes	Yes ³⁹	Yes
T-CRS:2 Behavior control	Yes	Yes	TR	Yes	Yes	Yes ⁴⁰	Yes
Head Toes Knees Shoulders (HTKS)	Yes	Yes	DA	Yes (floor effects for young children)	Yes	Yes ⁴¹	No
Motor Task	No	No	DA	Yes	Not Available	Yes	Not Available ⁴²

³¹ Demonstrate strong internal consistency, or a Cronbach's alpha of .80 or greater. If applicable, inter-rater reliability of Kappa/ICC greater than 0.70.

³² Demonstrate construct validity, including confirmatory factor analyses that indicate the presence of hypothesized constructs (and meet acceptable fit criteria, such as RMSEA < .05, CFI < 0.90, and SRMR < 0.08). Measures must also be related to other measures of similar constructs in expected directions at a magnitude of $r > 0.30$, as a means of demonstrating concurrent (convergent and discriminant) and predictive validity.

³³ Preference for assessments administered by trained and reliable assessors.

³⁴ Include sufficient variability to measure children at different places in the learning and development continuum, from preschool through kindergarten, and ability to identify children who are performing below, at or near, and above grade-level expectations.

³⁵ Have norm-referenced data available at the state or national level to permit the VPI+ team to determine the extent to which children in the program are meeting or exceeding normative averages.

³⁶ Applied Problems aligns with one of the six standards for mathematics.

³⁷ Available psychometric data are for children in kindergarten and older.

³⁸ Task orientation scale aligns with the approaches to learning standard in the personal and social development foundation blocks.

³⁹ Peer social skills scale aligns with the interaction with others standard in the personal and social development foundation blocks.

⁴⁰ Behavior problems scale aligns with several standards across the personal and social development foundation blocks.

⁴¹ HTKS task aligns with the self-regulation standard of the personal and social development foundations.

⁴² These skills develop from 3-6 years of age, so there are no national norms for four year olds in preschool.

Appendix B. Description of Outcome Models

We conducted a series of three-level hierarchical linear models (HLMs) (Raudenbush & Bryk, 2002). HLMs were used to estimate within-year change in child outcomes for participating VPI+ children. Each assessment observation (fall or spring assessment data) was nested within students, and students were nested within classrooms. A time variable at level 1 takes on the value of 0 for fall and 1 for spring. Given this time coding, the intercept at level 1 represents the fall outcome level, and the slope (i.e., the coefficient associated with the time variable) represents the growth/change in outcome from fall to spring. Random intercept models at levels 2 and 3 were specified to allow both children and classrooms to vary randomly in terms of their fall outcomes. Additionally, a random slope model at level 3 was specified to allow classrooms to vary randomly in terms their growth. Conversely, a fixed slope model at level 2 was specified. We note that this specification implies that all students within a given classroom grow at identical rates. Though individual variation in growth is expected in practice, this model specification is necessary given the error structure resulting from the two time point, pre-post design.

To account for the clustering of classrooms within school divisions that exists in the research design, a fixed effect strategy (Allison, 2009) at level 3 was utilized. Here, classroom level dummy variables reflecting division membership are entered into the level 3 model. Henrico serves as the reference school division, and all division dummy variables are grand mean centered to allow the intercept to reflect average values across divisions. This fixed effects strategy was chosen only after fitting an analogous four-level HLM with school division at level 4. Though preferable, the four-level HLM showed no significant random variation in division level intercepts or slopes. Consequently, the model was reduced to the three-level HLM, and a fixed effects strategy was utilized to attempt to account for fixed division differences.

Finally, differences in children, classroom, and division fall outcomes and growth from fall to spring were estimated by specifying the appropriate cross-level interactions. We note that interactions reflecting differences in growth across student-level characteristics were modeled as non-randomly varying interaction effects. This specification was necessarily, given the error structure resulting from the two time point, pre-post design.

Appendix C: Developmental Ranges for 4-Year Olds in the Spring PALS PreK Core Tasks⁴³

Task	Spring Developmental Range	Maximum Score
Name Writing	5-7	7
Upper-Case Alphabet	12-21	26
Lower-Case Alphabet (not required)	9-17	26
Letter Sounds (not required)	4-8	26
Beginning Sound Awareness	5-8	10
Print and Word Awareness	7-9	10
Rhyme Awareness	5-7	10
Nursery Rhyme Awareness	6-10	10

Source: Invernizzi & Huang, 2015.

⁴³ If a child correctly identifies 16 or more upper case letters, the lower-case letter recognition task is administered. If a child correctly identifies 9 or more lower case letters on lower-case alphabet awareness, the letter-sound task is administered.