

North Carolina Preschool Pyramid Model Implementation

Update Report January 2020

Background

North Carolina (NC) began the exploration phase of implementing the Preschool Pyramid Model (PPM) in 2008 with a technical assistance and training grant from the Center for Social Emotional Foundations of Early Learning. The grant required the establishment of a state interagency collaborative planning team with a birth-five focus. The first demonstration classroom was established in Johnston County Schools in 2008. The child care sector in NC launched the Healthy Social Behavior project to serve private child care centers in NC. Head Start launched one demonstration site, but it ceased to operate in subsequent years. Between 2008 to 2011, during the installation phase of implementation, NC Department of Public Instruction (DPI) Office of Early Learning (OEL) added two cohorts of school districts into the project while providing state funded trainers/coaches to work directly with classroom teachers. NC DPI OEL continued to develop the infrastructure to support a model that would develop sustainability within school districts by building their capacity to provide their own training and coaching. In 2013, NC DPI OEL collaborated with UNC Chapel Hill Frank Porter Graham (FPG) Child Development Institute to launch the NC Early Learning Network (ELN), a project providing a statewide system of professional development and technical assistance support, with the vision of accomplishing this goal. ELN project staff customized the national pyramid training modules to highlight how each pyramid effective teaching practice addresses NC's early childhood standards, called the NC Foundations for Early Learning (Foundations). In addition, each pyramid effective teaching practice was aligned with the NC Professional Teaching Standards so that both teachers and administrators could understand how the pyramid teaching practices demonstrate the standards for which teachers are held accountable to demonstrate the quality of their teaching. As initial implementation continued, NC DPI OEL formulated the hypothesis that high quality pyramid coaching improves outcomes for teachers and their students. Committed to this belief, between 2013 and 2016, DPI OEL and NC ELN collaborated to create and provide professional development supports designed specifically for PPM coaches within school districts implementing the PPM initiative. All PPM coaches must complete NC's Tier I PPM modules. Next, they are required to complete three coaching classes developed to support coaches' competence and confidence in coaching teachers to implement pyramid strategies to fidelity: 1) Mindful Coaching, 2) Teacher Pyramid Observation Tool (TPOT), and 3) Practice-based Coaching using the TPOT. In 2017, ELN

provided additional supports for PPM coaches through regional PPM coach meetings. ELN project staff also provided program coaching to district PPM leadership implementation teams to support their planning for pyramid implementation at the district level. Between 2016 and 2019, ELN also built an on-line data system to collect pre-and post-TPOT scores, coaching log information, child outcome data by class, and district implementation data. In 2020, ELN began piloting a statewide Preschool Pyramid Expert Coach (PPEC) certification process to develop and identify high quality coaches across the state to support district sustainability and scale-up.

In 2018, NC DPI OEL began a collaboration with the NC Head Start State Collaboration Office to expand this model of Pyramid implementation into Head Start programs not administered by school districts. That collaboration is now in its second full year.

The following information is the end of year data report for NC's PPM model in the Public School and Head Start collaboration project.

Evaluating the Efficacy of the Preschool Pyramid Project

Measuring the Effects on Child Outcomes

An important part of evaluating any educational project is ensuring that children are benefiting in some way. Therefore, in addition to the process evaluation of the NC Preschool Pyramid Model (PPM, formerly NC SEFEL) initiative, this section will summarize data on child outcomes, in particular children's social-emotional competence, an important protective factor that can reduce the likelihood of individuals dropping out of high school later in life.

Nearly all of the Local Education Agencies (LEAs) participating in the PPM initiative currently collect data on children's social-emotional competence using the Teaching Strategies Gold (TS Gold) assessment, which accompanies the Creative Curriculum. Although this measure is designed as a formative assessment tool for teachers, its strong psychometric profile (Lambert, 2017), along with data for a national norming sample and near ubiquitous use, provide an opportunity to use the tool to examine the degree to which use of the PPM is accomplishing its goal of improving children's social competence prior to kindergarten entrance.

In order to be included in the evaluation sample, classrooms must meet a number of requirements. First, like the national sample, all teachers providing data needed to have passed the inter-rater reliability TS Gold system training and test. Second, each teacher must complete all 11 modules of the *NC Foundations – Effective Teaching Practices for Social-Emotional Development* training. Finally, all reporting teachers are required to have met fidelity using PPM practices as measured using the Teaching Pyramid Observation Tool (TPOT) or be in the process of reaching fidelity while receiving practice-based coaching on PPM practices.

Before reporting the data, it is important to understand some key differences between the national norming sample for the TS Gold and the NC sample. First, the TS Gold normative sample included children attending center-based care in the United States. The NC sample is more restrictive, containing only classrooms in LEAs that include children with special needs. Second, the TS Gold sample excluded children with excessive absences and children who arrived late in the year, whereas the NC sample includes these children. In general, these sample differences would be associated with less progress on a scale of social-emotional functioning like the one examined here. However, as in years past, the opposite is the case. One explanation for this paradoxical finding is that the training and support the NC

teachers receive as part of their participation in the PPM lead to changes in classroom practices, which in turn lead to children with improved social-emotional competence.

In 2018-2019, teachers from 104 classrooms reported TS Gold data on approximately 1,560 children. Children in PPM classrooms made greater progress over the course of the preschool year on the social-emotional scale (mean Δ score = 14.35) than their counterparts in the national sample (mean Δ score = 10.75). Comparing the NC sample to the population via a two-tailed z-test suggests that the NC sample made significantly greater progress ($p < .0001$).

Measuring the Effects of Coaching

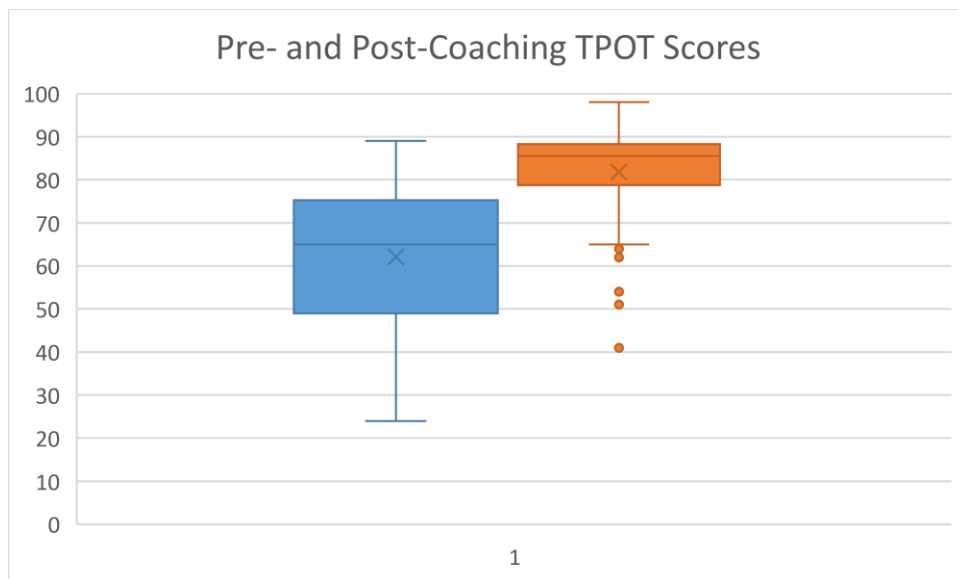


Figure 1. Box and whisker plot for teachers being coached

Coaches in PPM implementation counties report beginning and end-of-year TPOT scores for teachers they are coaching. Figure 1 shows the reported data for 57 teachers. The scores depicted in the blue box represent those collected prior to coaching in the 2018-2019 school year while those in the orange box represent those collected following coaching at the end of the year. The line in each box marks the median score in each distribution while the x designates the mean. The boundaries of each box mark the top and bottom of the middle 50% of the distributions. That is, 50% of all scores at each time period lie somewhere within each box. The whiskers denote the distance between the lowest and highest

scores outside of that 50% range. Finally, the individual dots represent individual outliers significantly above or below the median.

The median score for the pre-coaching TPOT (in blue) is 65, while the median score for the post-coaching TPOT (in orange) is 85, showing significant growth for teachers receiving coaching over the course of the year. Additionally, as expected, the box and whiskers for the initial TPOT scores cover a much greater distance than the post-coaching scores. This suggests that teachers receiving coaching became more similar to one another with regard to their implementation of PPM practices (i.e., exhibited more uniform, high quality practices).

For teachers who have already achieved fidelity on the Preschool Pyramid Model as measured by the TPOT, a yearly maintenance TPOT is also conducted around November or December. This TPOT allows practitioners to avoid slippage and falling out of fidelity with the program. Teachers receiving TPOT scores in during a maintenance observation receive some follow-up coaching and may work with the coach to create an action plan, if needed. Figure 2 shows the TPOT scores for the 65 teachers who received maintenance observations. The median score, 91, for these teachers is higher than for newer teachers still receiving coaching, indicating that past coaching to move them to fidelity has resulted in maintenance of that fidelity over the following years. Also, as with the post-coaching teachers, a narrower range of scores is noticeable, suggesting that these teachers are more uniform in practice with regard to PPM practices.



Figure 2. Box and whisker plot for teachers at maintenance

Implementation Progress

NC PPM Sites with Practice-Based Coaches

Currently there are 37 school districts in North Carolina operating 1,044 preschool classrooms and implementing the PPM. Implementation includes establishing leadership implementation teams, trainers, and practice-based coaches within their school districts. In 2018-2019, there were over 340 classrooms meeting or working toward fidelity of instructional practices, as measured using the TPOT.

Support for NC PPM Practice Based Coaches

Since training for coaches began, 773 participants have attended all of the NC Coaching training events. Three hundred thirty attended Mindful Coaching training, 296 attended TPOT training, and 147 attended Practice-Based Coaching using the TPOT training. Three hundred eighty coaches also attended regional coaches' meetings held in the fall and spring of each year. In 2018-2019, ELN designed and developed quarterly coaching webinars to help coaches further develop their skills and effectiveness.

Coaches Using the Statewide Online Coaching & Implementation System

As mentioned previously, ELN built the PPM online system to collect and analyze reliable coaching and implementation data. During 2018-2019, 214 coaches entered coaching and/or other implementation data into the online system.

Measuring Implementation Progress for Districts

In order for LEAs to effectively implement the PPM in classrooms, they must have support and systems in place at the district level to facilitate the adoption and use of the PPM practices. Leadership Implementation Teams from participating districts complete a Yearly Program Review (YPR), which includes data on the LEA's progress on key implementation steps, or indicators, which are described in the PPM practice profile and included in the district's PPM implementation plan. YPR

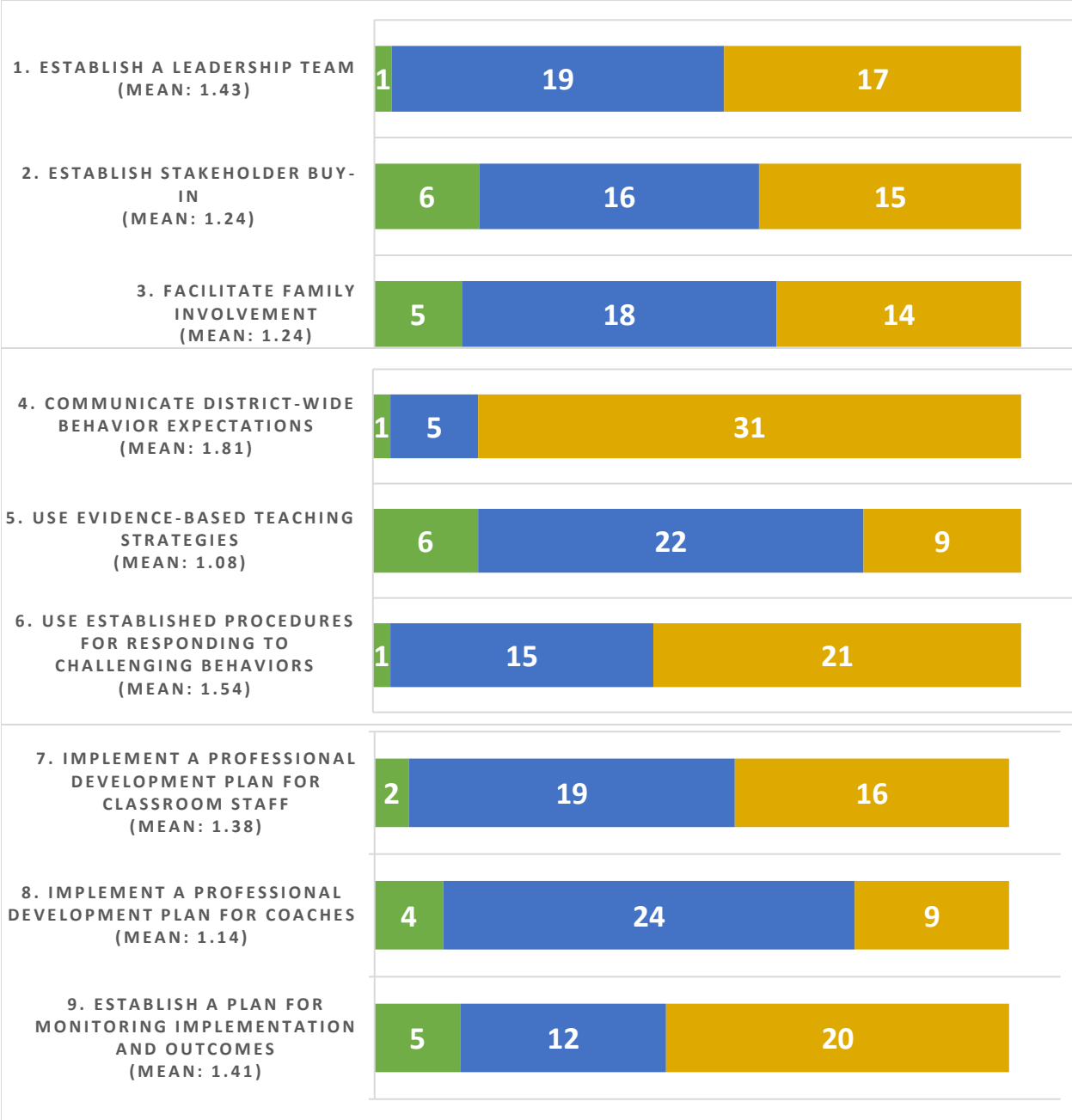


Figure 3. Program Implementation Data 2018-2019

data are entered and tracked in the online system. During

the 2018-2019 school year, 37 LEAs completed Yearly Program Reviews. Figure 3 shows the results of their ratings.

Optimally, existing districts would make progress on all indicators each year. However, for a number of reasons (e.g., staff turnover, reallocation of LEA resources), this does not necessarily occur. This year, mean scores on six of the nine indicators improved when compared to last year’s mean scores. Two indicators decreased. One indicator remained essentially unchanged. Table 1 shows the movement of means from 2017-2018 to 2018-2019. Normally, we would use caution in interpreting these changes from year to year due to the addition and subtraction of participating LEAs. However, between these two years, participating districts remained largely stable, allowing for the comparison.

Table 1. *Year-over-year key implementation step change*

Key Implementation Step	Year-over-year Mean Change
1	.17
2	-.23
3	-.20
4	.07
5	.05
6	.10
7	.12
8	.01
9	.09

In general, these results suggest that districts are taking positive steps toward their implementation of the PPM. The child outcomes and coaching efficacy both speak to the positive results of these implementation efforts. The negative movement on key steps two and three suggests a need for more technical assistance around establishing stakeholder buy-in and improving family involvement.

PPM Project Growth

An important goal of the PPM initiative is to increase the number of classrooms implementing PPM practices over time. This occurs in two ways: (1) by increasing the number of LEAs participating in the project and (2) by increasing the number of classrooms within each LEA that participate in the project. The former requires greater resources at the state level while the latter requires increasing resource allocation at the district level. Figure 4 shows the map outlining participating PPM sites in February, 2019.

There are 38 LEAs participating in the project and 3 Head Start offices. This represents the addition of four LEAs (Caswell, Buncombe, Ashe, and Randolph) over the previous year. The addition of the Head Start offices also represents an opportunity to leverage existing resources to continue growth, allowing partnering LEAs to train new cohorts at Head Start sites using Federal dollars to fund the expansion along this vector.

In addition to tracking the number and location of LEAs participating in the project, ELN also provides data showing the total number of classrooms at fidelity as measured by the PPM fidelity tool, the TPOT. Table 2 shows the growth of the project using classroom-level metrics. The number of teachers at fidelity across the project has grown each year, with growth accelerating significantly in 2017-2018 and maintaining that level in 2018-2019. As of the end of 2018-2019, the number of teachers at fidelity (268) had increased significantly from the first tracked cohort (190). This level of growth has remained consistent in spite of factors such as staff turnover and competing district priorities, which often serve to undermine progress on state-level initiatives.

North Carolina Preschool Pyramid Implementation Sites

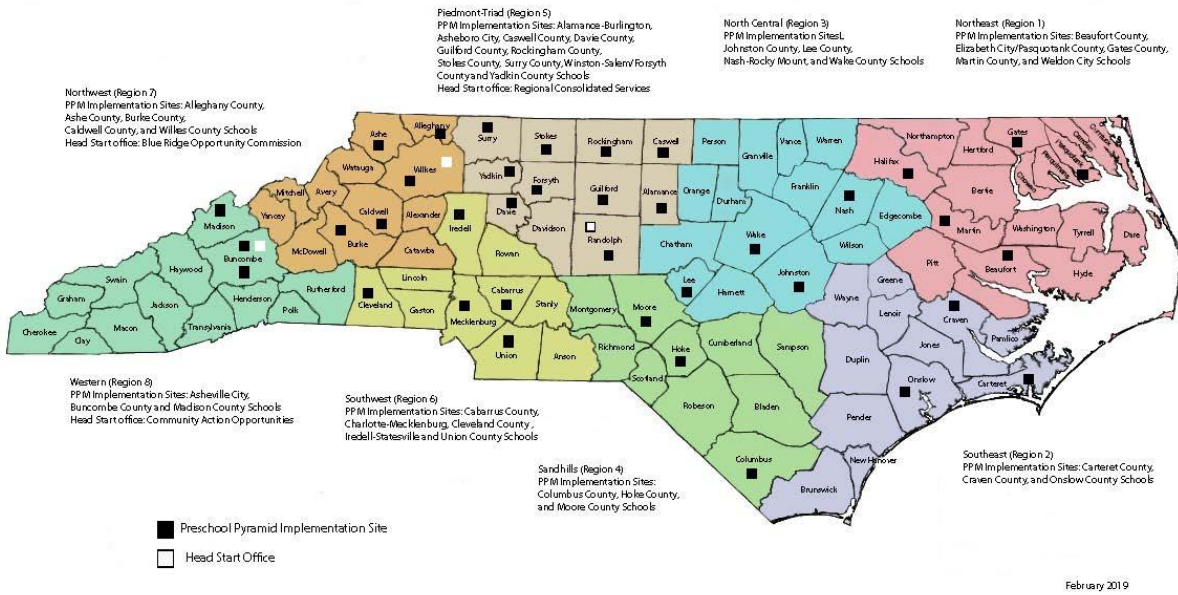


Figure 4. PPM Implementation Site Map

Table 2. Growth of teachers/classrooms at fidelity

Growth of classroom level metrics over time	2015-16	2016-17	2017-18	2018-19
Total number of classes in LEAs in the Preschool Pyramid Project	688	700	951	1044
Total number of teachers who have reached fidelity on the TPOT	190	203	233	268
Percent of classrooms with teachers who have reached fidelity on the TPOT	28%	29%	25%	26%
Cumulative percent growth of teachers at fidelity over time	-	7%	23%	41%

Program Collaborations

During the third year of PPM implementation, NC DPI decided to build its system within the public schools since they were connected through the state's finance department. Public schools also had fewer barriers to adapting training to address professional teaching and early childhood standards and implementing a scale-up process. The state childcare program in NC developed a much different approach to supporting pyramid practices that better fits the culture of private enterprise. Cross-sector collaboration began with expansion into Head Start programs, with the support of the Head Start State Collaboration Office Director. This collaboration is uncovering necessary adaptations to the implementation process while also building strong partnerships between schools and Head Start programs.

NC DPI OEL also recognizes the need to align the PPM with the K-12 system where much is happening in the world of Social Emotional Learning (SEL). In 2016, North Carolina's State Board of Education adopted the Multi-Tiered System of Support (MTSS) as a framework for overall school improvement. NC DPI created the Integrated Academic and Behavior Supports (IABS) division to implement MTSS. Within the past 3 years, consultants from NC's Positive Behavior Incentive System (PBIS) were moved to the NC Department of Public Instruction's Integrated Academic and Behavior Support division (implementing MTSS statewide) to ensure the MTSS model could be inclusive of both academic and behavior. As the implementation of the K-12 NC MTSS process began to roll-out in cohort groups, school systems (LEAs) across the state asked, "How does preschool fit into the MTSS model?" Leaders of the NC PPM initiative wrote a white paper (a government report giving information or proposals on an issue) in 2017 on "What Should MTSS Look Like in Preschool?" Since that time, leaders from the NC PPM initiative and the IABS division have met regularly to establish terms of reference and cross walk elements of the implementation process of each initiative to identify similarities and differences. Simply providing training and coaching on effective teacher practices to promote social-emotional learning and prevent challenging behaviors, and then using data to monitor child progress, does not meet all the critical components of a MTSS. The additional pieces of leadership support using implementation science, coaching teachers to fidelity, communication and collaboration between leadership and teachers, and program evaluation to inform program improvement were built into the NC PPM initiative. Continued work centers on exploring MTSS's definition of "universal screening for behavior" outside of identifying and responding to challenging behaviors. Terms such as "standard treatment protocol" are familiar to the K-12 MTSS sector but what does that mean for the PPM? What effective teacher practices and

processes are already in place in the PPM that meet the MTSS definition of a “standard treatment protocol”? ELN, with consultation from DPI IABS division, developed a standard treatment protocol for preschool social emotional and behavior support that is embedded in pyramid effective teacher practices.

More recently, NC has several school districts that are successfully implementing the PPM and interested in providing Kindergarten teachers similar training on effective pyramid teaching practices. As a result, NC, in consultation with the National Center for Pyramid Model Innovations is exploring expanding pyramid practices into Kindergarten.

The connection to mental health initiatives within the Department is also critical so that teachers and caregivers are aware of, and gain access to, mental health supports for preschool children. NC DPI received a multi-million SAMSHA grant to pilot mental health consultation in the public schools. Three districts participate, and all three are already implementing the PPM initiative. Preschool leaders in these districts are strongly encouraged to join the efforts in their districts, since the project is intended for PreK to 12th grade. Recently, funds for training mental health consultants on early childhood evidence-based practices were included in the NC Preschool Development Grant (awarded December 2019). In the next year, school districts and Children’s Developmental Services Agencies (serving Infants and Toddlers) across the state will become certified in these therapy programs. Lastly, NC DPI applied to be included in the CASEL Consortium of States Initiative which is a technical assistance grant to support a state’s scale up of social and emotional learning for schools. CASEL stands for The Collaborative for Academic, Social, and Emotional Learning (CASEL). This initiative brings together leaders focusing on social and emotional learning from DPI OEL, EC Division, Integrated Academic and Behavior Support Division, and NC Healthy Schools Division to organize and leverage resources across the state that support social and emotional learning. Collectively, goals are that:

- children and families gain access to necessary supports and services,
- teachers are trained in evidence-based practices to support SEL learning in the classroom, and
- teachers can identify red flag indicators for potential mental health concerns.

If successful, children will no longer be removed for behavioral concerns resulting in fewer absences, increased engagement in school, and better outcomes in school and the workforce.