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Progress Monitoring in Inclusive Preschools: Using Children's School Success+Curriculum Framework

Susan B. Palmer, Ph.D.,
University of Kansas, Beach Center on Disability, KUCDD, 1200 Sunnyside Ave., 3134 Haworth Hall, Lawrence, KS 66045 US

Kandace K. Fleming, Ph.D.,
University of Kansas, Life Span Institute, Lawrence, KS 66045 US

Eva M. Horn, Ph.D.,
University of Kansas, Department of Special Education, Lawrence, KS 66045 US

Gretchen D. Butera, Ph.D.,
Indiana University, Department of Special Education, Bloomington, IN 47404 US

Joan A. Lieber, Ph.D.
University of Maryland, Department of Counseling, Higher Education, and Special Education, College Park, MD 20742 US

Abstract

Progress monitoring in inclusive preschool classrooms should describe all children's progress towards general curriculum outcomes and individual children's unique outcomes or IEP goals. This research study used the CSS+ Curriculum Framework and progress monitoring process to assess the outcomes of 73 children on these dimensions. Children's progress monitoring data were analyzed within groupings based on instructional need level (i.e., low, medium, or high) in academic content and social domains. Progress monitoring findings for both the academic and social support level of need groups showed significant progress pre- to post-test on most academic outcomes, but some variation with less consistent gains within the social emotional domain. Goal attainment scaling data demonstrated children's gains toward achieving their social goals (IEP or specific learning goals) were at the expected level between 50% and 71% of the time. Academic-focused goal attainment was at or above the expected level of between 54% and 76% of the time, based on the learning grouping. Teacher implementation of CSS+ Curriculum Framework appeared to impact change in classroom and instructional practices pre-post intervention.

Keywords

preschool; progress monitoring; special education; goals

Inclusion has been a central theme in educational policy, professional preparation expectations, and research for years (Barton, Steed, & Smith, 2016). All children and their

Corresponding Author: spalmer@ku.edu.

families have a right to opportunities to learn and a sense of belonging within inclusive settings (DEC/NAEYC, 2009). Early education programs of the 21st century now include children whose families speak languages other than English and may identify with an "other than" traditional mainstream culture, children with identifiable disabilities, and children who are from diverse, socioeconomic circumstances (Odom, 2016). Today's early educators must not only attempt to make accommodations to support this range of diversity, but ensure that they intentionally link learning outcomes to the skills and content that each child can and should learn on their path to school success. Educational practice must address all students, including students with disabilities in an endeavor to master academic content to ensure better outcomes across the lifespan (Thoma & Palmer, 2015). Laying this solid foundation for mastery of academic and social knowledge and skill acquisition can and should begin in the early years or preschool setting (Epstein, 2014)). Early educators can and must hold high expectations for all children including children with identified disabilities, in order to support their continued success as they move through the school (Agran, Alper, & Wehmeyer, 2002; Horn, Palmer, Butera, & Lieber, 2016).

Too often, children with disabilities are less likely to be learning within the same high-quality curriculum as children without disabilities (Horn, Palmer et al., 2016). Today's early educator, in short, must provide equal access to interesting and integrated academic and social curriculum content while simultaneously addressing children's unique learning needs. The key elements to accomplishing this task are planning for and providing challenging and universally designed curriculum content, differentiation through curricular modifications, individualization, and child progress monitoring procedures. This latter element, progress monitoring, refers to a continuous measuring or documenting of change or progress in children's performance towards achievement of expected outcomes. As noted in DEC's Recommended Practices (2014), practitioners are expected to implement systematic ongoing assessment to inform their instructional practices. "Early childhood programs…are accountable for instructional and developmental outcomes for young children of different ages and background with diverse learning challenges" (Palmer, Butera, Friesen & Clay, 2016, p. 112). Thus, progress monitoring or the practice of gathering information to answer questions about children's progress towards development outcomes is a critical component of early education (Division for Early Childhood, 2014).

Progress monitoring involves assessment and decision making using a variety of measurements linked to instruction for standards-based learning. Assessment through progress monitoring and measuring IEP goal progress throughout the instructional year is an important part of inclusive educational practice (McLean, 2014). This article describes the use of whole class progress monitoring for academic and social outcomes of all children included in the initial CSS+ Curriculum Framework pilot study, and provides a description of the process of monitoring goal attainment and the resulting data on CSS+ outcomes that include IEP goals and goals individually determined for children without disabilities.

CSS+ Framework

The CSS+ framework is a multi-tiered model providing a roadmap for early educators to plan and deliver integrated social and academic instruction for all children by addressing the

scope and sequence of activities, standards-based learning, planning, instruction, and progress monitoring, as seen in Figure 1. Programs might use tiered models of instruction for social emotional outcomes (Pyramid Model; Fox, Dunlap, Hemmeter, Joseph, & Strain, 2003) or early literacy and language skills (Greenwood, Carta, Atwater, Goldstein, Kaminski, & McConnell, 2012). Our multi-tiered CSS+ model is "designed to provide high quality education to support the development of all children including those who may need additional intervention to ensure their developmental progress" (Horn, Palmer et al, 2016, p. 17).

The CSS+ Curriculum Framework guides teachers in planning the instructional environment and learning activities using: a) *Universal Design for Learning (UDL)* improving instruction for all children, b) *differentiation* to support their access, engagement, and meaningful participation with the core curriculum activities, and c*) individualization* as needed to address child goals outside the scope of the general curriculum and/or foundational to the child assessing the core curriculum. In addition, the CSS+ framework provides guidance to the early educator as they conduct *progress monitoring* including both core curriculum progress monitoring and monitoring learning of individual child goals.

Progress Monitoring and Early Learning Standards

A functional definition of assessment is "the systematic collection and evaluation of information to determine what, if anything, to do differently" (McConnell & Rahn, 2016, p. 90). The purpose of progress monitoring is to help teachers make decisions about their daily instruction. Progress monitoring assessment may be curriculum-based, formative, or an assessment of general outcomes, but measures need to be brief, repeatable, and easy to administer (Landry, Assel, Anthony, & Swank, 2013). This frequent measurement should yield data that teachers use to make decisions about ongoing intervention (McConnell & Rahn, 2016).

Decision making as part of progress monitoring involves considering whether the current intervention and materials are meeting the needs of each child (McConnell & Rahn, 2016). Systematic monitoring determines what behaviors are performed by children and under what conditions these behaviors appear to provide a clear focus on measuring growth, development, and change over time (Classen & Cheatham, 2004). Since children with disabilities in inclusive settings should be learning within the same general curriculum as their peers, our project emphasizes the use of progress monitoring for whole class learning. We also emphasize consistent and frequent monitoring of goals including those noted on IEPs when applicable. Some IEP goals may be unique and ancillary to the typical classroom activities and curriculum content (e.g. toileting, unique speech-language outcomes, or social emotional concerns not addressed in the curriculum). However, children with disabilities should be working on a broad-based, integrated curriculum weaving together social emotional and academic domains. Furthermore, the curricular focus for children with disabilities should be driven by standards, rather than be limited to IEP goals and the individualization that might be needed to guide IEP goal attainment (Pretti-Frontczak, et al., 2007).

When working with preschool children (3-to 5-years of age), early educators face the challenge of planning for and implementing a comprehensive set of learning activities to establish a basis for effective progress monitoring. Preschool teachers continuously monitor progress in real-time during ongoing classroom routines. A teacher must keep in mind the scope and sequence of learning activities and determine when and with what method they will monitor individual or small group achievement for the various domains. Setting aside just one time a week to do continuous monitoring means that target children are present when needed, somewhat cooperative in performance of requested tasks, and that the rest of the class is otherwise engaged in ongoing learning through play or structured activities that another adult in the classroom can direct – all of this is challenging to accomplish. In an inclusive classroom setting, although many IEP goals can be monitored as part of the ongoing process described previously, some IEP goals may be outside of the core curriculum. A teacher can use an Embedded Learning Opportunity (ELO; Horn, Lieber, Sandall, Schwartz, & Li, 2002) to create a learning sequence, a method for monitoring that matches the goal, and document progress each time an ELO episode occurs. Rather than depend on anecdotal memory, teachers in inclusive settings should clearly review and document progress on ongoing IEP goals. A teacher who has been exposed to planning and assessment methods should be able to address the needs of a child with goals outside of the general curriculum, with support from an itinerant special educator or related services such as speech or occupational therapy, for example.

In response to federal mandates in repeated authorizations of the Elementary and Secondary Education Act (ESEA), all states have established early learning standards across developmental and content domains (e.g., approaches to learning or cognitive, communication, and early literacy). Each domain has measurable outcomes for multiple ages to provide direction and coherence within early childhood education (Stipek, 2006). High-quality, preschool programs have been shown to enhance social-emotional development (Gormley, Phillips, Newmark, Welti, & Adelstein, 2011) and academic outcomes such as literacy (Dickinson & Porche, 2011) and mathematics (Clements & Sarama, 2008), but little research has demonstrated effects on both social and academic domains. The adoption of early learning standards has drawn attention to a more balanced emphasis on both academic and social outcomes for preschool children. There has also been increased emphasis on the importance of high teacher expectations for all children within this integrated learning process. The focus for progress monitoring should include both social AND academic areas in order to enhance overall development, especially for children with special needs. Indeed, "…a less dichotomous model of play versus academic content has emerged over the past generation, one that includes cognitive facilitation, emotional support and socialization" (Fuller, Bein, Bridges, Kim & Rabe-Hesketh, 2017, p. 2).

Fuller and colleagues (2017) examined a national sample of over 6,000 children from the Early Childhood Longitudinal Study, Birth Cohort at 48 and 60 months of age using a quasi-experimental method to take into account prior factors such as family characteristics and other demographics, type of preschool focus, and dosage. The effects of quality preschool instruction including activities emphasizing language, literacy, and mathematics as well as play-based interactions compared to a sub-sample of children in home-based care demonstrated effects for preschool attendance that persisted through Kindergarten for

academics. The authors suggest that better organized cognitive activities may support social competence and more research is needed for conclusive evidence. An example of how social and academic content interacts is vocabulary development, which not only helps to increase language and literacy skills (Wasik, 2010), but also supports overall child development. When children become more verbally expressive because they have more words to use, they are able to play well with others and express their feelings to peers and teachers, exhibiting more advanced social-emotional skills (Justice et al., 2003). Separating cognitive effects from social outcomes appears to be somewhat artificial.

Linkages between social and academic learning are prevalent in the early childhood literature. Girard and Girolametto (2013) found that social behaviors of preschool children predicted phonological awareness outcomes. Denham (2006) concluded that social emotional factors such as emotion regulation, positive interactions with others, and positive peer interactions often predict academic success. Riggs, Greenberg, Kusche and Pentz (2006) determined that interventions to improve social-emotional learning and self-regulation also strengthened engagement in cognitive activities. There is increasing awareness that both academic and social behaviors are critically important and closely connected for preschoolers.

Learning experiences must be interesting, engaging, and relevant to the learning needs of a range of young learners while addressing critical early learning outcomes linked to children's later academic success (Copple & Bredekamp, 2009; Grimm, Steele, Mashburn, Burchinal, & Pianta, 2010). In the CSS+ Curriculum Framework, we use a broad-based view of curriculum design and integrate the many elements that compose the content and context of teaching and learning in varied inclusive preschool settings. We focus on progress monitoring and goal setting for all children, not just children with IEPs. The framework accounts for "the diverse contexts in which early childhood education occurs and the diverse abilities, cultural milieus, and family constellations of children who participate" (Odom, et al., 2016, p. xii).

The purpose of this study is to describe the progress monitoring results of a one-year implementation of the CSS+ curriculum framework materials. We used curriculum-based progress monitoring and evaluated goal attainment for all child participants. Two primary research questions addressed progress monitoring: Do all children with different levels of support needs make significant gains in standards-based progress monitoring? Do all participating children make progress on individual goals regardless of their support needs?

Method

Participants and Settings

Seventy-three (73) children between the ages of 36 and 61 months (M= 50.89, SD =6.3) were recruited from 12 inclusive preschool classrooms. Fifty-one males (69.9%) and 22 female children (35.6%) took part; 26 children (35.6 %) had Individual Education Programs (IEPs).

The classrooms of participating children were in Head Start (n =7) or public school inclusive special education classes with reverse mainstreaming (n = 5) where children without disabilities are taught in the same group with children with IEPs. Classrooms were located in both rural and urban settings, resulting in a socially and economically diverse sample. Teachers included five special educators with additional hours or a graduate degree in special education and seven teachers who had a bachelor's degree in education or child development, with no formal training in special education. School districts that collaborated with Head Start provided consulting services from an iterant special educator. Teachers had taught an average of 11.5 years in preschool (range, 2 to 24 years) with a mean of 6.17 years in their current position (see Table 1 for participant, reporting family members, and teacher information).

We rated participating children as to their academic and social needs (low, medium, high needs) near the end of the year (See Procedures for explanation of the rating process). Of 73 total participants irrespective of special education status, 23 children needed little academic support, 25 needed medium amounts of academic support, and 25 showed high needs for academic support, as seen in Table 2. More children without an IEP were rated as having medium academic needs. For social support needs overall, 28 children had low social support needs, 26 had medium social support needs, and 19 had high social support needs. Eight of the 26 children with an IEP were rated as having low social support needs, with three of these eight also had low academic needs. Of the 47 children with no IEP, seven were rated as having high social support needs, and four of those seven also had high academic support needs. Four children of the 14 with high needs in both academic and social areas did not have an IEP.

Procedure

We conducted this pilot study in partnership with university sites, programs, and teachers in the field. Three university sites (two Midwestern, one Eastern) obtained IRB permission to conduct research, and personnel contacted preschools in authentic settings in rural, urban, and suburban communities to participate. We built community connections with programs over two years of iterative development, review, and trial of CSS+ Curriculum Framework methods and materials. Teachers spent four hours in a collaborative training of the most recent iterative version of the CSS+ Curriculum Framework materials at their individual programs before the school year began. The training focused on activities to support children's early academic and social learning, review the focus of the research study, and participate in discussions about their experiences using CSS+ curriculum framework's challenging integrated curriculum model for progress monitoring. Throughout the year, a research team member assigned to each class was available to consult on activities, methods, and progress monitoring as needed.

Teachers used the suggested curricular framework and assessed standards-based instructional outcomes at least once every quarter. Lead teachers, either special or general educators, took the lead in progress monitoring, with support from other adults in the classroom. In addition to monitoring developmental outcomes, each teacher designated two IEP goals for children in special education or set two goals for children without IEPs and

collaborated with researchers to create a rubric for measurement. Researchers formally observed teachers twice in fall and spring to measure indicators of the instructional environment and teacher practices and used a fidelity of implementation checklist to rate key components of instruction. I

As stated earlier (i.e. Participants and Settings, at the end of the year researchers conferring with teachers assigned every child a low (less need for support), medium, or high support need rating in both academic and social development based upon observation of each child throughout the study. We asked teachers whether each child on average needed academic or social support in most activities, some activities, or very few activities throughout the school year. Researchers also considered pre and post assessment results and the field notes from bi-weekly observations of classroom activities (Horn, Palmer, Butera, & Lieber, 2014). Two evaluators rated each child's status independently and reached consensus by discussing any disagreements. Further analysis on support needs groups is in Results section below.

Child Outcome Measures

Overall progress monitoring.—Teachers used progress monitoring to measure child outcomes on general curriculum outcomes aligned with program and state Early Learning Standards. Head Start classes used *Teaching Strategies Gold*, (Teaching Strategies, Inc., 2011) which is linked to *Creative Curriculum for Preschool* (Dodge et al., 2002) and aligned with the Head Start Learning Outcomes Framework. The special education classrooms nested within a school district used standards-based indicators linked to the *Assessment, Evaluation, and Programing System* (*AEPS*: Bricker & Waddell, 2002). Both rating systems used a similar structure and range of one to three points (1= Not Yet Present, 2=In Process, and 3= Proficient). Child outcomes were assessed in six domains: Language (comprehension, expression, and usage); Cognitive (approaches to learning, memory, classification, and symbol use); Literacy (phonological awareness, alphabet and print knowledge, listening comprehension, and emergent writing); Mathematics (number and operations, spatial relationships, measurement, patterns); Physical (gross and fine-motor skills); and Social-Emotional (regulation of emotions, positive relationships, and cooperative interactions). Although progress monitoring data were collected throughout the year, we analyzed only first and last measurements, to ensure equal dosage of implementation between project start and completion. Although we hoped to be able to use multiple data points over time, the timing of assessments throughout the year varied, and was not consistent across all sites.

Goal setting and attainment evaluation.—Teachers identified two needs within social or academic areas to focus on each semester for all children in the study. If a child had an IEP, teachers chose two existing IEP goals. As teachers selected goals, each site's research team talked with teachers to find current level of accomplishment and expected progress, customizing each five-step rubric to a child's perceived ability. Researchers and teachers collaborated to set up five graduated levels of achievement for each child's learning goals using Goal Attainment Scaling (GAS; Carr, 1979; Simmeonsson, Bailey, Huntington & Brandon 1991) to evaluate goal progress at the end of each semester. Teachers monitored goals using direct observation through time sampling and frequency counts (Classen &

Cheatham, 2014). Teachers rated child progress at one of five levels: much less than expected, less than expected, expected level, more than expected, or much more than expected. We used a scoring conversion (Cardillo, 1994) to assign numerical scores to each rubric level to rate goal completion of disparate topic goals for analysis. In about half of the cases, children did not immediately complete specific long-term goals so these rubrics were rated and then updated at the end of fall to continue into the spring semester. If children achieved goals in the fall, teachers set a new goal for the spring.

Two researchers coded each goal for specific curriculum content independently and reached 98% agreement, coming to consensus on any disagreements. Goal categories include mathematics (counting, shapes, numbers), literacy (letters, sounds, book reading), writing (write letters or numbers), social-emotional (play, talking with others, sharing, playing), self-regulation (following directions, participating, engagement, school rules, asking for needs), science (colors, properties of matter), communication (requesting basic needs, choices) and cognitive (basic concepts and categories).

Related Teacher and Classroom Environment Measures.

Fidelity of Implementation.—We developed an implementation fidelity process using a logic model (Taylor-Powell & Henert, 2008) to determine the key, unique features and components that lead to significant positive outcomes. We formulated indicators for low, average, and high implementation, aligning tools with key curriculum content domains (i.e., literacy, science, math, and social skills) while rating UDL, individualization, and progress monitoring within the teaching and learning environment. At least 25% of ratings were made by two observers to ensure for reliability of scoring.

Early Language and Literacy Classroom Observation (ELLCO).—We observed and rated teacher instruction and classroom environments with the Early Language and Literacy Classroom Observation (ELLCO-PreK; Smith, Brady, & Anastasopoulos, 2008) twice during the school year, with 25% of observations made by two persons. The ELLCO has high internal consistency with alphas ranging from 0.73 to 0.90 across subscales; the ELLCO Inter-rater reliability coefficient was 0.84.

Analysis

Multilevel data analysis procedures were used to appropriately model the variance due to class as well as child. General Linear Mixed Model (GLMM) analyses were employed to answer the research questions regarding gains in social and academic outcomes over time. The analytic model for the analysis included three levels: Level 1--Time (pre and post) was nested within Level 2-Children, which were nested in Level 3-Classrooms, to control for the dependencies between children taught in the same classroom (reduce teacher effects). Effect sizes for the change from pretest to posttest were calculated by dividing within group gains in adjusted (LS) means by observed posttest standard deviations. As described earlier (i.e. Procedures) , we rated children on the need for additional supports for academic learning and social emotional skills and determined if these groups varied by age and gender. We used multilevel regression to determine if the changes in scores from pre- to post-testing were similar across children in three groups based on social and academic need. Goal

attainment comparisons used descriptive information to contrast results within all goals and those specifically for children with IEPs.

Results

Overall Progress Monitoring Domains

The results of grouping by academic support needs and social support needs were similar across the progress monitoring domains studied. For most outcomes, there was a significant main effect for time indicating progress for all children. Typically, the simple effect of time within each support group was also significant indicating progress for children with all types of support needs. Significant main effects for support group were also consistently observed with children who had lower support needs having better scores, except for measures of gross and fine motor skills which did not show as much variation between groups since this domain is less dependent on academic or social groupings.

Regarding possible needs group differences, Fisher's exact tests indicated that there were no significant differences in gender between children in the IEP group (23% female) and the group with no IEP (34% female), p=.43. Additionally, independent samples t-tests indicated that there was not a significant difference in age between the groups (p=.75), with children who had IEPs average age of 50.6 months (SD=6.3) and children without IEPs average age of 51.0 (SD=6.4). Similarly, there were no significant gender or age differences between academic and social support need groups, although high needs children tended to be slightly younger with an average age of 50 months compared to 52 months for low support needs. For the academic needs groups, 22% of the low, 44% of the medium, and 24% of the high support needs were females. For the social support needs groups, 29% of the low, 35% of the medium, and 26% of the high support needs were female.

The interaction between time and support group was not significant in any group, indicating that there were not differential treatment effects for children based on social need group – or one group did not outpace the other score-wise. Table 3 contains results for time of measurement, support level, and time and support interaction effects. Table 4 has means, standard errors for each of two times of measurement, and effect sizes for each domain according to academic and social support needs. We provide a full explanation of the Language domain with respect to academic and social support need groupings, with abbreviated reports of similar patterns of Cognitive, Literacy, Mathematics, and Physical domains.

Language.—For Language outcomes there was a significant main effect for time $F(1,11) = 42.90$, $p < .0001$, and a significant main effect for academic support need, $F(2,16)=11.49$, $p<.001$. The interaction between time and academic support need was not significant $F(2,16) = .18$, $p=.83$. For each of the academic need groups, there was a significant increase from time 1 to time 2 with F-values ranging from 10.19 to 17.87. Children with low academic support needs increased by .38, children with medium academic support needs increased by .32, and children with high academic support needs increased by .40 in their language scores.

Language outcomes as calculated for social support need groups resulted in a significant main effect for time $F(1,11) = 45.98$, $p < .0001$, and a significant main effect for Social Support need, $F(2,18)=5.59$, $p<.01$. The interaction between time and social support need was not significant $F(2,18) = 1.11$, $p=.35$. For low social support needs group, children increased by .26, children in the medium social support needs group increased .42, while children with high needs in social support increased .44.

Cognitive, Literacy, Mathematics, Physical, and Social Emotional Domains.— For outcomes in most domains, there were significant main effects for time and a significant main effect for both academic and social support needs but the interactions between time and academic support need were not significant, nor was the interaction between time and social support need, as seen in Table 4. Average scores across both time points decreased as academic and social support needs increased and for each of the academic support groups, there was a significant increase from time 1 to time 2 except for social emotional scores for those with medium academic support needs or high social support needs.

Goal Attainment for All Children.—Overall, teachers set 291 goals for the 73 children with 107 social goals (37%) and 184 academic goals (63%). The most common goal category was Self-Regulation with 47% of the sample having at least one self-regulation goal. Self-regulation goals included following directions, on-task behavior, using simple problem solving, participating in small group activities, asking for needed help, waiting for a turn, and attending during non-preferred activities. Forty-two percent of the sample had at least one literacy goal (letter names/sounds, naming letters in own name, answering probes during book reading, and pointing to letters). The least common goals were in the areas of cognitive, science, and writing. Overall, the collective goals for the three groups of participants by academic and social needs group were achieved at the expected level of 50 or above as seen in Figure 3.

Teacher and Classroom Changes.—There were significant changes in ELLCO total score from pretest (Mean = 3.67, SD=.33) to posttest (Mean=3.93, SD=.36) indicating that that both teacher and classroom practices changed over time ($t(17) = 2.94$, $p=.013$). These increases were observed in both General Classroom Environment scores where means increased from 3.97 (SD=.34) to 4.06 (SD=.30), ($t(11) = 2.77$, $p=.018$, d=.81) and instruction of Language and Literacy scores where means increased from 3.60 (SD=.38) to 3.86 (SD=.38), ($t(11)=2.56$, $p=.026$, d=.75). Language and literacy scores at posttest were correlated with teacher experience in preschool $r=.60$ ($p<.04$) and with age $r=.62$ ($p<.03$). Overall interrater reliability was estimated at $k=.87$ with discussion used to come to consensus.

Ratings for teachers for each item on fidelity checklists ranged from 1 to 3 where 1=low, 2=average, and 3=high implementation. Fidelity ratings ranged from 2.54 for literacy during reading to 2.00 for phonological awareness indicating that teachers could competently implement the CSS+ intervention in their classrooms. Interrater reliability was established, $k = .94$, with consensus.

Discussion

Progress monitoring results were consistent in that both social and academic support needs groups made significant progress in most domains except for the social-emotional domain. Attaining social-emotional competence is a goal for early childhood, but social development may be impacted by individual differences in child temperament, attachment, self-regulation, cultural and family influences, and possible challenging behaviors as barriers to both social and academic progress (Palmer et al, 2016). Self-regulation behaviors directly influence school behaviors such as the ability to comply with requests from others or engage in self-directed thinking or social problem solving. Although children are expected to attain self-regulated behaviors during preschool, a goal to be more self-regulated often extends beyond the early years. Since many of the social goals set in the study were about self-regulation (47% of children had at least one self-regulation goal) it is not surprising to see variation in attaining significant progress in the social emotional domain for all needs groups.

It was not surprising that the goal focus for most children in the study was on self-regulation as well as literacy. Preschool curricula is focusing more on teaching social skills and elements of literacy. These most commonly set goals were aimed at multiple levels of attainment, meeting individual child needs and learning capacities but overall were met at the expected level, showing that teachers knew their children and set expectations at a reasonable level to results in most goals being attained at 50 or above. This goal attainment process that was part of our research protocol proved to be an effective way to address specific learning needs for all children in the study. Of course, children with IEPs have goals discussed at least once per year at a meeting of team members. However, as we interacted with teachers to identify needs of other children participating in the study within the format of goals and possible outcomes, teachers really responded positively. The focus of a learning or social goal highlighted more targeted instructional needs along with the identified method of progress monitoring for this specific purpose. Setting goals based on student interests and combining these with skill building or learning activities is less likely to be a part of preschool programming, but has been shown to be effective for instruction in the early years (Palmer & Wehmeyer, 2003).

The preliminary progress monitoring outcomes for the CSS+ Curriculum Framework in inclusive settings show promise for all children regardless of need level or IEP status. In order to ensure that an intervention is appropriate for all children, it is important to confirm effectiveness for relevant subgroups. Our solution was to identify levels of support – low (less likely to require differentiation to learn in the general curriculum), medium, (sometimes needing differentiated instruction), and high support needs (often needing special instruction that may include individualization) and to examine intervention effectiveness for all levels. Traditionally, researchers use IEP status to indicate need. Within our study population, we found that having an IEP was not the best indicator of level of need within social and academic areas overall. Most early childhood professionals recognize that children with learning difficulties are not limited to those with IEPs (Lieber, Palmer, Horn, & Classen, 2014). Using the CSS+ Curriculum Framework's tiered model, we encouraged teachers to make sure their classrooms were inclusive by planning through universal design,

UDL instructional support, progress monitoring, and encouragement to use differentiation with any children who needed it, regardless of IEP status. Certainly, children with more severe disabilities may need some level of individualized instruction to accomplish goals not addressed within the general curriculum, but teachers in the study reported positive results when using a challenging, integrated curriculum through CSS+ to motivate, engage, and instruct young children with disabilities.

This study highlights difficulties within early identification of disabilities in preschool. Hebbeler and Spiker (2016)point out the challenges such as consistent identification of young children for special education services within states and districts depending on both the continuum of developmental functioning (when a child falls below the norm) and state and local policies. In addition, assessment of young children is limited due to a lack of adequate measurement tools.. Although standardized, norm- referenced assessments are used for determining placement for special education services, these lack “authenticity and functionality needed for program planning and would be difficult to operationalize into the development of meaningful educational goals or instructional content” (Macy & Hoyt-Gonzales, 2007, p. 40). Further, many children identified between the ages of three-to-five years have a speech or language impairment or a primary disability of developmental delay or autism (Hebbeler & Spiker). Developmental delay is used in some states through the age of five, or it may extend through eight years-of-age, so that actual IEP disability label does little to indicate needs or ability levels in many cases. Children with IEPs may have disabilities in academic or social areas, or both. We contend that using the marker of an IEP or no IEP is insufficient, at least in early childhood settings to understand how much support children may need academically or socially.

A multi-tiered system of support (MTSS) guides frequent progress monitoring to “identify children who are not making expected rates of short-term progress and who may benefit from more intensive intervention” (Greenwood,Kaminiski, Linus, Carta & Nylander, 2011, p. 2). Thus, a teacher can use differentiated instruction to provide intensive targeted services and continue monitoring progress, rather than immediately moving to recommend further testing for special education services. Furthermore, although we see IEP goals as important to address, we encourage teachers to instruct IEP goal content within the general curriculum as much as possible, while maintaining high expectations for children who may need additional supports to learn. An important finding in our study involves the teachers and classrooms in our study. Not all the teachers were special educators, but regardless of professional pre-service training, teachers were able to work with children of all abilities to improve learning outcomes by using the CSS+ framework.

The CSS+ framework features clear distinctions between Universal Design for Learning (UDL), differentiation, and individualization for early childhood general and special educators. These clearly different constructs are often haphazardly linked or recombined making it difficult for teachers to use these concepts in instructional planning, initial implementation, and later differentiation and/or individualization. Preschool teachers who effectively deliver instruction in inclusive settings must be mindful of these aspects of instruction that benefit all children, but especially must consider children with more intense learning needs who may or may not have an IEP. Our findings indicate that all children with

various levels of academic and social need can make significant progress when our model is used.

Limitations

The findings of this study are preliminary, at best, within the context of the following limitations. The absence of a control group in this iterative design restricts our ability to draw conclusions regarding the efficacy of the CSS+ materials and framework. This study is a brief examination of the use of challenging, integrated curriculum framework for all children, and can only begin to denote feasibility and utility for the model.

Another limitation is the method we used to group children into low, medium, and high needs for analysis. Bias probably entered the assignment to academic and social needs groups due to the opinions and impressions each study team may have formed across the implementation year. However, we did not complete these ratings until the late spring, so these groupings did not influence the instructional practices of early educators during the school year. Decisions on needs groupings made by study personnel, with some help from teachers, used impressions gained through the process of interacting with children during the research process and observations during classroom instruction. In addition, the scores of goal accomplishment on GAS scores may have been influenced by teacher opinion – which could reflect differences among teachers in expectations for children. Even though we did not consider IEP status as part of the decision making for assignment to groups, this may have introduced bias in selection of groupings. Unfortunately, we did not directly investigate teacher perception of children with IEPs and are unable to document whether this might have moderated the level of expectation teachers might have for the achievement of all children over time.

Assessments that involve observation by adults may be highly influenced by teacher judgement. This is especially true with the GAS process as teachers provide information about goals to set, how the goal rubric is structured, and the rating of each goal. We depended on teacher judgement; we did not directly observe goal outcomes. However, it is important to consider that much of assessment conducted in preschool depends on clinical judgement and could be impacted by the interaction between the research team and teachers as they rate goals.

Implications for Further Research

In order to develop and subsequently implement a coherent curriculum plan, the early educator or group of educators within a program need(s) a curriculum framework including comprehensive progress monitoring to guide decision- making for the teaching and learning process and maximize the likelihood that all children will achieve desired outcomes. This study used the CSS+ framework to aid preschool teachers to effectively teach all children included in classrooms and measure progress on curriculum and IEP goals. Our findings indicate that all children with various levels of academic and social need made significant progress when teachers used the CSS+ framework.

Rather than focusing on social or academic outcomes alone, integrating social emotional and academic-related domains and effectively monitoring progress on all domains will benefit all children. More research must focus on whether children's learning is positively impacted when teachers use both explicit and implicit instructional strategies matched to the task, by the context in which learning is to occur, and children's prior knowledge and understanding of the content (Hong & Diamond, 2012). In addition, some educators believe that young children are not ready to learn sophisticated content. We know that children in preschool programs that include instruction on the key academic content areas geared to early childhood interests and abilities, such as literacy, language, science, and mathematics, have an academic advantage as they enter school (Downer & Pianta, 2006).

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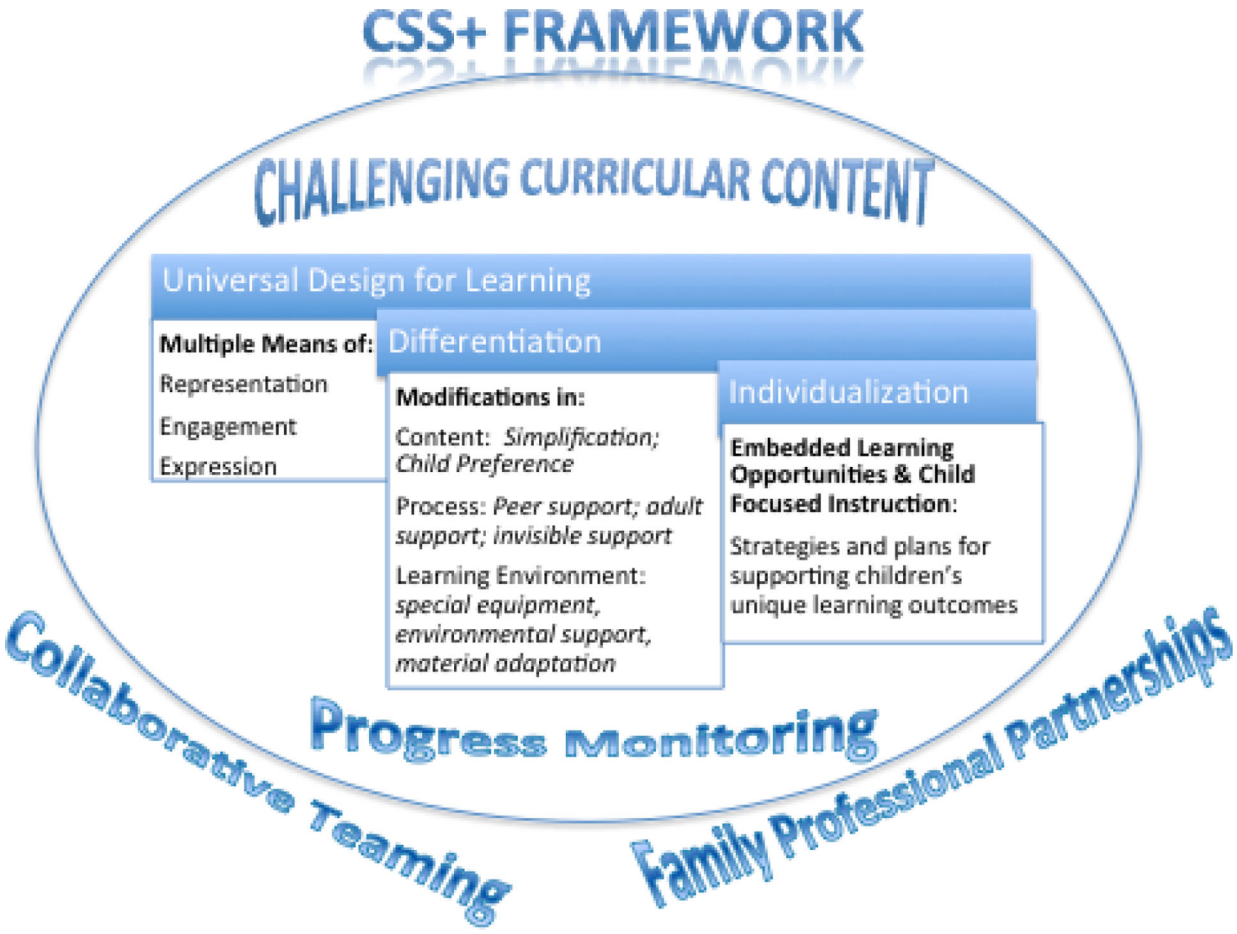

Figure 1.
Children's School Success Framework

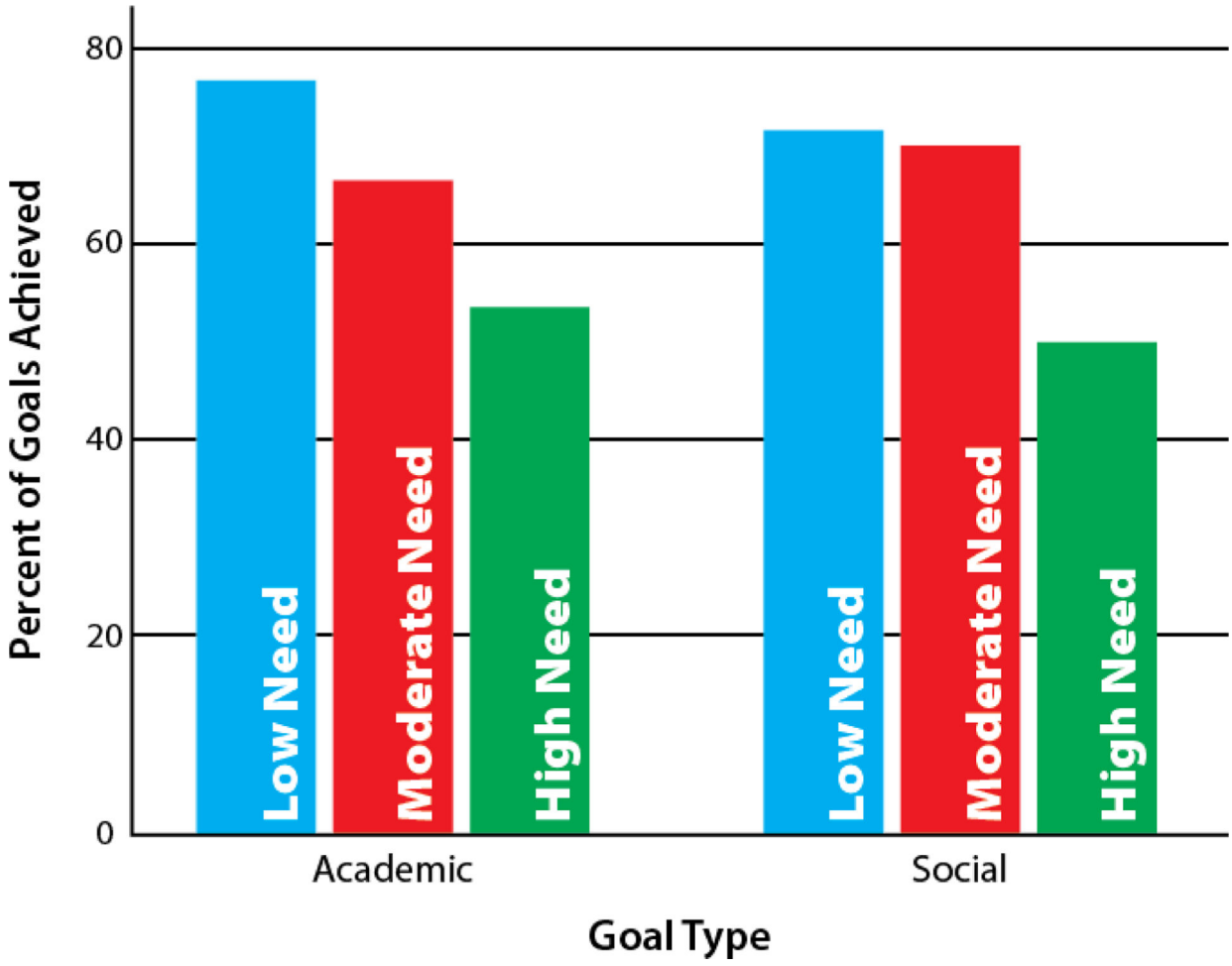

Figure 2.
Goal Attainment Scores by Need Group for Academic and Social Outcomes

Table 1

Student, Teacher, and Family Member Information

	Age	Female	Male	Ethnicity	Other Information
Students *N* = 73	*M*=50.89 mo. *SD*=6.30 Range 36–61 mo.	22 (30.1%)	51 (69.9%)	White/non-Hispanic/Latino *n*=40 (54.8%); White/Hispanic/Latino *n*=9 (12.3%); African American *n*=15 (20.5%); Asian or Pacific Islander *n*=3 (4.1%); Mixed Race *n*=6 (8.2%)	*Income of Family*: Less than $10,999, *n*=26 (39%); Between $20,000 and $39,000, *n*=20 (30.3%); Between $40,000 and $59,999, *n*=7 (10.6%); Between $60,000 and $79,999, *n*=9 (13.6%); More than $80,000, *n*= 4 (6%); and Income not provided, n=6, 8.3%) *
Teachers *N* = 12	*M*=38.82 yrs. *SD*=9.25 Range 25–52 yrs.	12 (100%)	0	White/non-Hispanic/Latino *n*=9 (75%); White/Hispanic/Latino *n*=1 (8.3%); African American *n*=2 (16.6%);	*Area of Teacher Training/Expertise*: Early Childhood, *n*=5 (41.7%); K-12 Education, *n*=4 (33.3%); Child Development, *n*=1 (8.3%); Physical Therapy, *n*=1 (8.3%); and Speech-Language Pathology, *n*=1 (8.3%).
Family Members – reported child info. *N*=67 *	*M*=31.76 yrs. *SD*=6.99 Range 21–52 yrs.	56 (76.7%)	11 (15.1%)	White/non-Hispanic/Latino *n*=43 (64.2%); White/Hispanic/Latino *n*=11 (16.4%); African American *n*=8 (11.9%); Asian or Pacific Islander *n*=3 (4.1%); Mixed Race *n*=8 (1.5%)	*Education Level of Reporting Family Member*: Some high school, n=14 (21.2%); High School Graduate or GED, *n*=12 (18.1%); Some College Credits, *n*=24 (36.3%); Associate's Degree, *n*=4(6%); Bachelor's Degree, *n*=10 (27.8%); Graduate Degree, *n*=2 (3%).

* Six families declined to provide family descriptive information; teachers provided child descriptions for these participants.

Table 2

Child Support Needs by Academic and Social Support Needs, Individualized Educational Program (IEP) Status

Participants		Low Social	Medium Social	High Social	TOTAL
N=73	**Low Academic**	16	6	1	23
	Medium Academic	8	13	4	25
	High Academic	4	7	14	25
	Total	**28**	**26**	**19**	**73**
n=47, No IEP	**Low Academic**	13	6	1	20
	Medium Academic	5	9	2	16
	High Academic	2	5	4	11
	Sub-Total	**20**	**20**	**7**	**47**
n= 26, IEP	**Low Academic**	3	0	0	3
	Medium Academic	3	4	2	9
	High Academic	2	2	10	14
	Sub-Total	**8**	**6**	**12**	**26**

Table 3

Effect of Academic and Social Support Needs on Progress Monitoring Domains

Progress Monitoring Domains	**Time**	**Academic Support**	**Interaction of Time & Support**	**Groups Improved (Sig. Dif.)**
Language	$F(1,11) = 42.90$, $p < .001$	$F(2,16)=11.49$, $p<.001$	$F(2,16) =.18$, $p=.83$	All 3
Cognitive	$F(1,11) = 39.39$, $p < .001$	$F(2,16)=16.60$, $p<.001$	$F(2,16) = .02$, $p=.98$	All 3
Literacy	$F(1,11) = 82.33$, $p = .001$	$F(2,16)=14.06$, $p<.001$	$F(2,16) =.78$, $p=.48$	All 3
Mathematics	$F(1,11) = 60.53$, $p < .001$	$F(2,16)=19.85$, $p < .001$	$F(2,16) =1.28$, $p=.31$	All 3
Physical	$F(1,11) = 31.30$, $p < .001$	$F(2,16) = 3.61$, $p<.051$	$F(2,16) = .52$, $p=.61$	All 3
Social Emotional	$F(1,11) = 24.39$, $p<.001$	$F(2,16)=10.98$, $p<.001$	$F(2,16) = .75$, $p=.49$	Low & High
	Time	**Social Support**	**Interaction of Time & Support**	**Group(s) Improved (Sig. Dif.)**
Language	$F(1,11) = 45.98$, $p<.0001$	$F(2,18) = 5.59$, $p<.01$	$F(2,18) = 1.11$, $p=.35$	All 3
Cognitive	$F(1,11) = 41.92$, $p<.0001$	$F(2,18) = 3.62$, $p<.048$	$F(2,18) = .78$, $p=.47$	All 3
Literacy	$F(1,11) = 82.57$, $p<.0001$	$F(2,18) = 2.55$, $p<.11$	$F(2,18) = .62$, $p=.55$	All 3
Mathematics	$F(1,11) = 53.66$, $p<.0001$	$F(2,18) = 5.65$, $p<.01$	$F(2,18) = 1.66$, $p=.22$	All 3
Physical	$F(1,11)= 29.32$, $p < .001$	$F(2,18)= 3.20$, $p < .06$	$F(2,18)= .30$, $p=.74$	All 3
Social Emotional	$F(1,11)= 24.20$, $p < .001$	$F(2,18)= 7.83$, $P<.004$	$F(2,18)=1.05$, $p=.37$	Low & Medium

Table 4

Means, Standard Errors, and Effect Sizes for Subgroups of Students – Low, Medium, and High Academic and Social Needs

Progress Monitoring Domains	Low Academic Needs			Medium Academic Needs			High Academic Needs		
	Time 1	**Time 2**	**Effect Size, *d***	**Time 1**	**Time 2**	**Effect Size, *d***	**Time 1**	**Time 2**	**Effect Size, *d***
Language	2.13 (.12)	2.51 (.12)	.72	2.02 (.12)	2.34 (.12)	.68	1.71 (.12)	2.11 (.12)	.91
Cognitive	2.39 (.13)	2.75 (.13)	1.50	2.20 (.13)	2.54 (.13)	.83	1.92 (.13)	2.25 (.13)	.72
Literacy	2.22 (.13)	2.72 (.13)	1.43	2.00 (.13)	2.38 (.13)	.81	1.72 (.13)	2.08 (.13)	.61
Mathematics	2.26 (.16)	2.66 (.16)	1.18	1.96 (.16)	2.48 (.16)	1.02	1.76 (.16)	2.07 (.16)	.47
Social Emotional	2.51 (.14)	2.80 (.14)	1.32	2.40 (.14)	2.59 (.14)	.44	1.99 (.14)	2.36 (.14)	.62
Physical	2.31 (.14)	2.69 (.14)	1.06	2.29 (.14)	2.55 (.14)	.62	2.12 (.14)	2.39 (.14)	.54
	Low Social Needs			**Medium Social Needs**			**High Social Needs**		
	Time 1	**Time 2**	**Effect Size, *d***	**Time 1**	**Time 2**	**Effect Size, *d***	**Time 1**	**Time 2**	**Effect Size, *d***
Language	2.08 (.12)	2.335 (.12)	.50	1.99 (.13)	2.41 (.13)	.76	1.69 (.13)	2.13 (.13)	1.16
Cognitive	2.30 (.14)	2.59 (.14)	.81	2.17 (.14)	2.51 (.14)	.59	1.93 (.15)	2.39 (.15)	1.07
Literacy	2.12 (.14)	2.51 (.14)	.74	1.94 (.14)	2.32 (.14)	.55	1.78 (.15)	2.28 (.15)	1.16
Mathematics	2.11 (.17)	2.56 (.17)	1.18	1.95 (.17)	2.43 (.17)	.70	1.85 (.18)	2.10 (.18)	.38
Social Emotional	2.49 (.13)	2.72 (.13)	.79	2.26 (.14)	2.66 (.14)	.83	2.03 (.15)	2.26 (.15)	.38
Physical	2.35 (.14)	2.64 (.14)	.81	2.20 (.14)	2.56 (.14)	.77	2.12 (.15)	2.36 (.15)	.46