

## **Assessment and Diagnosis II**

### **Advancing Holistic Evidence-Based Approaches for Assessing Children's School Readiness Competencies**

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An initial study examined multiple dimensions of preschool competency (cognitive, social, approaches to learning, and physical/motor) using both variable-oriented and person-oriented approaches, with a Head Start sample (McWayne, Fantuzzo & McDermott, 2004). Variable-oriented analyses yielded three higher order classroom competency dimensions: 1) General Classroom Competence, 2) Specific Approaches to Learning, and 3) Interpersonal Classroom Behavior Problems. Hierarchical setwise regressions demonstrated that the first two of these dimensions related uniquely to an indicator of early school success (Meisels, Marsden, Wiske & Henderson, 1997). Person-oriented analyses then examined patterns of these three dimensions among children in the sample. This approach revealed seven profiles of child competence, which were then grouped into three sets: children at-risk for later learning difficulties, children demonstrating academic competence, or children who overlapped these two groups (McWayne, Fantuzzo & McDermott, 2004).

This initial study was limited by its concurrent design. Thus, a follow-up study was conducted to test the predictive ability of the preschool competency dimensions and profiles from prekindergarten through the end of first grade. Based on the prior study's findings, two main hypotheses were submitted: (1) Protection and risk as indicated by dimensions (variable-oriented) in pre-kindergarten will predict kindergarten and 1<sup>st</sup> grade academic and social outcomes; (2) At-risk profiles and competent profiles (person-oriented) in pre-kindergarten will predict performance across kindergarten and 1<sup>st</sup> grade outcomes. To test the variable-oriented hypothesis, bivariate and canonical correlation analyses were conducted. To test the person-oriented hypothesis, analysis of variance was employed.

Both hypotheses were confirmed, indicating that children's skills in preschool were associated with their social and academic performances in kindergarten and first grade, both according to teacher-assessed performance and standardized testing. First, the specific approaches to learning and general classroom competency preschool dimensions related positively to both kindergarten and first grade outcome measures. Second, the 7 profiles aligned with hypothesized levels of competence (profiles 2, 3, 4 and 7) and risk (profiles 5, and 6) based on relationships with kindergarten and first grade social and academic outcomes, according to the ANOVA procedure.

Both the variable-oriented and person-oriented approaches show promise for a more holistic-interactionist view of child development (Mahoney & Bergman, 2002). This study provides empirical evidence that a more comprehensive whole-child assessment approach can be useful 1) in accounting for how children's skills overlap across multiple domains, and 2) for identifying subgroups of children with various patterns of strengths and needs. This is the first study, to date, to employ both approaches with a low-income, ethnically diverse preschool group.

These findings suggest that patterns of preschool skills become more important as children progress through their early years of school indicating the importance of specific intervention at this early age. Implications for early childhood practice and policy are also discussed.

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## **Preschool Achievement Scales for Maximum Sensitivity to Learning Growth Patterns Over Multiple Short Intervals in Head Start**

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Standardized achievement tests are fundamental to the assessment of school accountability, student exceptionality, and the evaluation of educational interventions and research and are central to the formation of our broader national educational policy (U.S. Department of Education, 2001). There is a pressing need for achievement measures, specifically for preschoolers that will reflect growth over relatively brief intervals which would allow timely redeployment of resources or instructional strategies and would reveal the differential trajectories and learning patterns that students manifest.

Within this context, we developed a design framework and Criterion-referenced tests (CRTs) in alphabet knowledge, vocabulary, listening comprehension, and mathematics to enable repeated administrations over the Head Start school year with maximum sensitivity to short-term growth in learning. Two forms of each test were designed to reduce practice effects. Items were co-developed for forms' comparability in content and length, and were reviewed by preschool curricular specialists and Head Start master teachers, then piloted and revised. The revised tests (termed the Learning Express) are designed for altering-form administration during October, January, March, and May. Items were criterion mapped to the Head Start Learning Indicators, Pennsylvania Preschool Standards, federal National Reporting System (NRS; U.S. Department of Health and Human Services, 2003), applicable norm-referenced tests (NRTs) and developmental inventories.

The finalized tests utilized basal and ceiling rules, lasted approximately 30-minutes, and revealed improvements in proficiency over a three-month interval exceeding one standard deviation. Moreover, the average increment in correctly answered items exceeded for the three months what NRTs typically display over an academic year. Differential growth patterns were also evident across the tests, demonstrating how in a short time period more homogeneous skill patterns become varied and differentiated. External validity coefficients between the CRTs and corresponding NRT were established. CRT scores were significantly related to academic skills one year later in kindergarten.

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## **Parent and Teacher Agreement on Devereux Early Childhood Assessment Items in a Sample of Children in Head Start**

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Previous research has demonstrated the magnitude of parent and teacher agreement at the item level on measures of behavior to be low (Cai, Kaiser, & Hancock, 2004; Verhulst & Akkerhuis, 1989). Despite conflicting findings around the effects of demographic factors like age or sex, previous research also revealed that parents and teachers tend to rate specific behaviors differently (e.g. Achenbach, 1995; Offord et al., 1996). Substantial concordance between the rankings of problem behaviors based on parent- and teacher-reported prevalence rates has been found (Gagnon et al., 1992; Loeber et al., 1991), suggesting that the hierarchies of problem behaviors based on parent and teacher ratings were more alike than different.

Without the precedent of studies examining item-level agreement on measures that include strengths ratings for young children, we examined parent and teacher agreement on both individual strength and problem behavior items using the Devereux Early Childhood Assessment (DECA; LeBuffe & Naglieri, 1999) in a sample of 474 children in Head Start. Developed for use with preschool children aged 2-5, the DECA is a standardized, norm-referenced behavior rating scale that contains 27 strength behaviors and 10 problem behaviors commonly seen in preschool aged children.

Several analytical strategies, used previously in item-level agreement studies, were conducted to determine the extent of parent and teacher correspondence in rating children's behaviors. We found the prevalence of both strength and problem behaviors were higher in parent reports than in teacher reports. Agreement between parent and teacher ratings for problem behaviors was minor, as evidenced by low correlations, kappa values, and co-identification rates. However, co-identification rates were considerably higher for strength behaviors, despite low correlation and kappa values. Moreover, substantial correspondence was observed in parent and teacher rankings of problem behaviors and strengths items based on the percentage of children reported to exhibit each behavior. As anticipated, the relative occurrence of specific behaviors was similar for home and school settings. We also found parent-teacher agreement for strength and problem behaviors were influenced by sex and age of the child. These findings add to the limited literature on item-level agreement between parent and teacher reports of strength and problem behaviors and contribute to our understanding of the ways to identify such behaviors in young children.

Given the low rates of agreement between parent and teacher reports, both in studies at the subscale and item level, it may not be appropriate to exclusively rely on either parent or teacher reports for identification. The differences found in the ratings between parents and teachers suggest that each informant may contribute unique information to the picture of child functioning. Indeed, it has been suggested that low agreement between informants may be due to situational specificity of the behaviors being assessed rather than the low reliability of the measures (Achenbach, McConaughy, & Howell, 1987). As it is less likely that behavior is

influenced by one setting when raters co-identify specific behaviors, determining when and on what behaviors parents and teachers agree can be important to planning for children's emotional and behavioral needs.

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## **Promoting Resilience in Young Children: The Devereux Early Childhood Assessment Program**

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Strength-based assessment and intervention is a relatively new approach to the education and health promotion of young children. The most notable advantage of this approach is that it lends itself more readily to primary prevention and wellness-promotion than the traditional focus on deficits and problems. Werner's recommendation that both assessment and diagnosis in early intervention should focus on protective factors (Werner, 1990) has been hampered by the lack of an economical, psychometrically sound, and clinically useful measure of within-child protective factors. The *Devereux Early Childhood Assessment (DECA)* (LeBuffe & Naglieri, 1999) provides early childhood professionals with an empirically sound tool for assessing protective factors in preschoolers.

The *DECA* is a reliable and valid tool that provides useful information for identifying children who may be at risk for social and emotional difficulties (LeBuffe & Shapiro, 2004). The National Association for the Education of Young Children standards state that assessment only has value if it leads to improved outcomes for children. Thus, the DECA Program provides strategies to strengthen protective factors based on assessment results. In 2000-2001, a pretest-posttest control group design assessed the effects of the typical DECA Program implementation on 342 preschool children. Children in both the Target and Control groups showed significant increases in their Total Protective Factor (TPF) scores as rated by teachers, but the Target group children showed greater increases (moderate effect size). For parent raters, only the target group showed an increase in their TPF scores (small effect size). Teacher ratings of Behavioral Concerns showed a significant decrease for the Target group and a significant increase for the Control group. For parent raters, there was no significant decrease in Behavioral Concerns for the Target group, but there was a significant increase for the Control group.

The first part of this study replicates the above findings when implementation included technical assistance from Devereux. In a county-wide Head Start setting serving 434 diverse children in 2004-2005, the DECA Program was implemented in 24 classrooms. There was statistically significant improvement in TPF scores across children ( $d=.92$ ) and significant decreases in behavioral concerns. Although parents did not receive direct intervention through the DECA Program, they reported significant improvements in TPF ( $d=.24$ ) suggesting that rater expectancy effects can be dismissed as an explanation for the teacher findings. Furthermore, results also document a statistically significant positive relationship ( $r=.77$ ;  $d=1.0$ ) between teachers' knowledge of DECA concepts/strategies and an increase in students' TPF.

The second part of this study examined the relationship between within-child protective factors, as measured by the *DECA*, and other indications of health and school-readiness in young children. Analysis of the correlations between *Creative Curriculum*, *Brigance*, and *DECA* assessment scores, confirmed that *DECA* scores correlate most strongly with other measures of social-emotional health, and that measures of physical development and cognitive development

relate to preschool resiliency, but not as strongly. These findings about the convergent and divergent validity of the *DECA* further our knowledge about the relationship between various competencies of preschool children as they could relate to school and life success.

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## **Developing the Indicator of Parent-Child Interaction: An Easy-to-Use Tool for Monitoring Change in Parenting Outcomes**

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Parent-child interactions set the stage for early social-emotional development either through warm, responsive scaffolding that supports the emergence of new social-emotional skills or through non-responsive behaviors that fail to support or that may directly interfere with competency development and lead to social-emotional problems (Jones & Carter, 2005; Landry, Smith, Swank, Assel, & Vallet, 2001). While many measurement tools are available for assessing infants and toddlers, practitioners who work with very young children on a regular basis have limited means of knowing whether their intervention practice is helping a child or parental caregivers make progress toward important outcomes. Usually, assessments are not conducted often enough to provide practitioners and parents with ongoing information on how an individual child is doing, or when children's data are aggregated together, whether a program of intervention is working. Therefore, a gap exists between available measures and the evaluation tools needed to inform practitioners who are trying to influence children's progress toward important outcomes. The IPCI is a means of checking growth toward the important general outcome of interactions in which parental caregivers respond to their child in ways that promote positive social-emotional behavior and development. It was designed for use by practitioners from diverse disciplines charged with progress-monitoring and measuring outcomes of interventions aimed at social-emotional health promotion through very early positive-behavioral support (such as Early Head Start home visitors, Part-C early interventionists, home visiting nurses, and infant/toddler mental health specialists). The measure involves observing the behavior of parents and children during four structured analogue activities: free play, book reading, dressing, and a distraction task. A set of ratings are given on the relative frequency of a set of parent (or other caregiver) behaviors and child behaviors after they are observed in each of the four activities. A parent or other caregiver is rated on the relative frequency of occurrence of both positive behaviors (such as conveying acceptance, following the child's lead, using descriptive language, or using stress-reducing strategies) and negative behaviors (such as using restrictions and intrusions or using a harsh voice). A child is rated on relative frequency of positive behaviors such as sustained engagement in play or negative behaviors (such as crying, tantruming, and withdrawn behavior). The purpose of this poster is to report results pertaining to technical adequacy and sensitivity of the IPCI. A repeated measures, longitudinal cohort design study was used to examine the IPCI. Participants, reflecting diverse cultural backgrounds, included 64 children, age 3 to 42 months, and their parents, who were recruited from both inner-urban and rural settings in the Midwest. Aspects of technical adequacy, including reliability, concurrent validity, predictive validity, and sensitivity and specificity were examined. Results provide promising initial support for technical adequacy of the IPCI.

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