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Developing a Unified Performance Measurement System

In recent years, a host of studies have exposed wide inconsistency in quality of early childhood education programs in the United States.[1] Findings reveal that large populations of young children receive poor or inadequate services. Policymakers have responded by pursuing a variety of strategies to measure and ultimately enhance children's early learning experiences. However, with numerous measurement tools available, the meaningful and consistent measurement of quality has proven challenging. It is unclear how quality measures compare, what they specifically measure, and how they function across three early childhood education systems—child care, Head Start, and state-funded pre-kindergarten.

To address these questions researchers at the National Center for Children and Families at Teachers College, Columbia University examined two measures designed for program improvement, monitoring, and research and evaluation: the *Early Childhood Environment Rating Scale-Revised* (ECERS-R), a tool that describes global classroom quality; and the *Program Administration Scale* (PAS), which measures the quality of a center's leadership and management practices.[2] This research brief summarizes the results of that study.[3]

Sample and Methodology

The sample included 130 classrooms in 39 centers located in a large metropolitan area in the northeast United States. The investigation focused on two overarching research questions: How do the ECERS-R and the PAS relate to one another and do these assessment tools function similarly for different program types? The sample was stratified by type of setting and included 13 Head Start centers, 13 child care centers, and 13 universal pre-kindergarten centers. The pre-kindergarten programs were located both within community-based programs as well as public schools.

To address the first research question, bivariate correlations between the ECERS-R and the PAS were examined. The program administration subscales of the ECERS-R (the *Program Structure Subscale* and the *Parents and Families Subscale*) were isolated and, using correlations, compared to the full PAS. Next, an item-by-item comparison of both full scales using factor analysis was conducted to assess whether they measure similar or unique aspects of program quality. To address the second research question, bivariate correlations between the ECERS-R and the PAS were compared separately across the three distinct programs types (Head Start, child care, universal pre-kindergarten).

Findings

The Relationship Between the ECERS-R and the PAS

- Comparing the full ECERS-R and the full PAS, a moderate correlation of 0.39 ($p<0.01$) was found, suggesting a significant and positive association.
- The two ECERS-R subscales that address program administration (the *Program Structure Subscale* and the *Parents and Families Subscale*) were compared with the full PAS. A single variable was created that represented the average of the two ECERS-R subscales and then the researchers examined bivariate correlations between this single ECERS-R program administration variable and the average total PAS score ($r=0.34$; $p<0.01$).
- The two program administration-related subscales were also considered separately. Both the correlation between the *Program Structure Subscale* and the PAS ($r = 0.25$, $p<0.01$) and the correlation between the *Parents and Families Subscale* and the PAS ($r = 0.33$, $p<0.01$) indicated significant and positive associations. Both the *Program Structure Subscale* and the *Parents and Families Subscale* contributed to their combined association with the PAS. In other words, it appeared that neither subscale was independently driving these findings.
- An 8-factor model emerged from the factor analysis that accounted for approximately 52% of the common variance. The following four factors explained the majority of the variance and held conceptual integrity:
  - Factor 1: general program administrative practices;
  - Factor 2: classroom learning and activities;
  - Factor 3: space for staff, parents, and children including special needs children; and
  - Factor 4: materials and compensation.
- Factor 1 contained only PAS items, while Factor 2 contained only ECERS-R items. The remainder of the factors contained a mix of PAS and ECERS-R components. These findings suggest that the PAS and ECERS-R tap into unique and distinct aspects of early childhood education settings.

Quality Measures Across Different Program Types

- Within the Head Start centers, bivariate correlations between the ECERS-R and the PAS were negatively but not statistically significantly associated (0.14; p=0.35).
- Within the child care centers, the correlation between the ECERS-R and the PAS demonstrated a positive and significant association (r=0.41; p<0.01).
- Within the universal pre-kindergarten sites, the ECERS-R and the PAS were positively and significantly associated (r=0.41; p<0.05).

Discussion

Taken together, the results from the correlations and factor analyses of the PAS and ECERS-R suggest that while both tap into program quality, they measure different aspects of the construct. Correlations between the ECERS-R and PAS were consistently statistically significant but relatively weak, suggesting that while the two measures are associated, they are not redundant.

The results from the factor analysis confirm these findings and suggest that the two measures capture distinct components of program quality. The structure of the factors indicated that items in the PAS tap into discrete constructs not otherwise captured by the ECERS-R. In sum, these findings reveal that the two measures each make a unique contribution to an overall program quality assessment.

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The association between the ECERS-R and the PAS held in the child care and universal pre-kindergarten sites but this link did not exist within the Head Start sites. This finding may suggest discordance between global quality in the classroom and program administration practices in Head Start settings. Alternatively, there may not have been sufficient variation in PAS scores among Head Start sites in the sample to detect an association. Head Start's rigorous program standards create consistency across programs and ensure that programs meet many of the expectations outlined in the PAS. As a result, the PAS may function differently in Head Start programs than it does in other types of early childhood education programs.

The findings of this study indicate that while the ECERS-R and the PAS both measure program quality, they are most valuable when used together as they each measure distinct aspects of quality. The findings suggest that in Head Start settings, the PAS may not detect variations in administrative quality because of the uniformity across programs in policies and procedures. However, given the small sample size and the growing emphasis on Head Start/child care collaboration, this is an area that warrants further research.

As demand for accountability increases and as quality assessment and improvement efforts spread across the country, it is essential that assessment measures are meaningful and consistent. Understanding how quality measures compare, what they specifically measure, and how they function across different systems is important in interpreting results as well as minimizing redundancy in measurement and maximizing efficiency.

References

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