Project Description

This project proposed to improve the professional development, quality, and effectiveness of Head Start teachers who serve children and families in a rural setting through on-site and in-vivo individualized mentoring, collaborative professional development and supervision provided to teachers focusing upon using developmentally-appropriate and specific “evidence-based” practices with young children. Specifically, the study attempted to show support for a mentoring model designed to improve teacher effectiveness and ultimately, identify variables that are related to child outcomes.

Research questions/hypotheses

The study proposed to investigate the following questions:

- Did individualized mentoring with teachers result in measurable increases in teacher’s use of effective and “evidence-based” instructional and management behaviors with young children?
- Did teachers who received individualized mentoring demonstrate more effective use of specific evidence-based instructional and management behaviors than teachers who did not receive individualized mentoring?
- Did children of mentored teachers show better progress than children of un-mentored teachers in acquiring prerequisite early school success competencies?

The objective of the research study was to examine the overarching hypotheses that

- Teachers who received mentoring increased the frequency of desired teaching behaviors, as measured by the Classroom Assessment Scoring System (CLASS), and the Early Language and Literacy Classroom Observation (ELLCO).
- Teachers who received mentoring displayed more effective use of specific evidence-based instructional and management behaviors than teachers who did not receive individualized mentoring as measured by the Classroom Assessment Scoring System (CLASS), and the Early Language and Literacy Classroom Observation (ELLCO).
- Children taught by teachers who exhibited the desired teaching behaviors achieved higher levels of early literacy skills, social skills, and self-regulatory behaviors, as measured by scores on their individual program’s curriculum based assessment, than children of teachers who did not exhibit these behaviors.
Sample

The study included a sample of 110 lead teachers and 129 assistant teachers working in three low SES, rural Head Start programs in West Virginia and Pennsylvania. The child sample size included 1729 children, age three to five.

Methods

COMET mentoring aims to develop lasting professional competencies in teachers to provide high quality education for children’s school readiness in literacy, social-emotional and behavioral development. Following Head Start standards and aims in curriculum and instruction, COMET pursues an on-site, in-vivo, and individualized mentoring, in which teachers and mentors work collaboratively to develop professional competencies that can be used independently after the completion of the program.

The COMET program is based on a triadic model that involves COMET mentors, Head Start teaching teams, and liaisons. This includes leadership and supporting teams from COMET and Head Start tied together within a collaborative relationship. COMET mentors are early childhood professionals who received training as teacher-mentors in the early childhood field and are knowledgeable of academic content areas, early child learning, adult learning, classroom observation, teacher performance assessments, and the standards and regulations of early childhood education including Head Start. The teaching team in COMET is comprised of a lead teacher and an assistant teacher who work together in the same Head Start classroom. The leadership and supporting teams are from Head Start administrative staff and university research investigators.

The following elements define COMET:
- In-vivo classroom observation
- Weekly individual meetings
- Collaborative mentoring (MET) plans and systematic feedback
- In-vivo progress observations

The following variables were consistent components of the mentoring process across teaching teams and were quantified during the study:
- Modes (face to face mentoring, phone call, written report, email, or other)
- Strategies (classroom observation, demonstration/modeling of specific skills, goal planning, formal on-site workshop training, verbal feedback, written feedback, or collecting resources)
- Topics (aligned with CLASS and ELLCO content)

Teachers were randomly assigned to either a mentoring group (experimental) or control (no mentoring) group. Teachers who were assigned to the mentoring group (experimental) received on-site COMET mentoring training for two years.

Measures

The following measures were used to assess teaching behavior outcomes. The Classroom Assessment Scoring System (CLASS; Pianta, R.C., La Paro, K.M., & Hamre, B.K., 2009) is an observation instrument designed to measure classroom quality in early childhood settings. The CLASS includes ten dimensions under three domains that are rated on a seven point Likert Scale, ranging from Low (1,2) to Mid (3,4,5) to High (6,7).

The Early Language and Literacy Classroom Observation scale (ELLCO; Smith, M.W. & Dickinson, D.K., 2002) is an observation tool designed to identify the instructional practices and environmental supports that facilitate children’s early literacy and language development in early childhood settings. Specifically, the Literacy Environment checklist and Literacy Activities Rating Scale were used in the study to assess teaching strategies. The ELLCO was collected at pre and post-test each intervention year by University staff and students. The internal consistency for each measure ranges from .79 to .91 (CLASS) and .73 to .92 (ELLCO). Interrater reliability agreement ranges from 79% to 97% for the CLASS, and 81% to 90% for the ELLCO.

Additionally, the research team modified and developed measures designed to assess the mentoring relationship, and the modes, strategies, and content of mentoring sessions.
Analyses

Analysis of the research questions included t-tests, analyses of covariance (ANCOVA), and hierarchical linear modeling techniques (HLM). Specifically, a series of paired sample t-tests was conducted to examine the within group changes on the CLASS and ELLCO assessments. Additionally, a series of ANCOVA’s was conducted to determine the between group differences on the CLASS and ELLCO assessments. Pre-test scores served as the covariates in those analyses, and post-test scores were the dependent variables. HLM analyses were used to examine the impact of mentoring on child outcomes.

Exploratory analyses of the data collected in the study included descriptive analyses, and regression analyses. Stepwise regression analyses were conducted to determine the impact of various demographic and mentoring variables on the post-test CLASS and ELLCO assessments.

Results

Results showed that teachers who received mentoring for two years demonstrated significant progress on the CLASS Emotional Support and Instructional Support domain scores, and on the following CLASS dimensions: Teacher Sensitivity, Regard for Student Perspective, Concept Development, Quality Feedback, and Language Modeling. These teachers also displayed significant improvements on the ELLCO Literacy Environment and Literacy Activities scales.

Furthermore, results showed that teachers who received mentoring for two years demonstrated significantly higher post-test scores on the CLASS Instructional Domain and following dimensions: Concept Development and Quality Feedback compared to the control group. These teachers also displayed significantly higher post-test scores on the ELLCO Literacy Environment scale.

Exploratory analyses revealed that mentoring variables such as topics, strategies, and time, were found to predict outcomes. These results suggest that mentoring variables, rather than demographic variables such as years of teaching experience and level of teacher education, have a greater impact on outcomes. Specifically, the more mentoring teachers received, and the more content (specific topics and strategies) were related to higher scores on the CLASS and ELLCO assessments.

Descriptive analyses of the data suggested that the mentors most frequently utilized verbal feedback as a strategy when working with teachers. Most of the time was spent in direct, face-to-face contact with the teachers. Over half of the mentors and over two-thirds of the teachers rated their mentoring relationship favorably, and nearly three quarters of the teachers attributed a moderate or higher amount of their personal growth to the mentoring relationship.

These results suggest that individualized mentoring is an effective way to provide professional development to teachers in early childhood settings, and that a longer intervention period leads to improved outcomes.

Implications for policy/practice

The field-validation research for the COMET mentoring model offers a clear statement that an individualized, relationship-based, and on-site mentoring approach with teachers using a uniform and structured step-by-step format aligned with goals/content that are linked to “best practice” standards is highly effective in improving teaching practices.

Based upon our analysis of the extant research literature in education, generally, and early childhood, specifically, we conclude that the nature, attributes, and content of mentoring has not been studied as perhaps the best vehicle for vastly and effectively improving teacher practices. While consultation has been studied, mentoring and its dimensions have been neglected. Our current study establishes clearly that individualized mentoring improves teacher’s instructional and management practices.

Based upon our COMET research results, 8 dimensions seem to be the most important “operational” elements for implementing an effective mentoring process which will improve teaching practices: mentor-protege interpersonal relationship; uniform step-by-step mentoring model with training of mentors; use of the CLASS measure for observation and goal-setting; collaborative goal-setting linked to the CLASS indicators; an individualized mentoring plan of CLASS goals and mentoring strategies; regular feedback; duration of mentoring; quality checks based on measures of mentee and protégé perceptions. The COMET model effectively blends these 8 elements into a seamless process of mentoring.
For more information:


[www.earlychildhoodpartnerships.org](http://www.earlychildhoodpartnerships.org)

Contact

Stephen J. Bagnato, Ed.D., NCSP  
Professor of Psychology & Pediatrics  
Schools of Education & Medicine  
Applied Developmental Psychology Program Director, Early Childhood Partnerships (ECP) [www.earlychildhoodpartnerships.org](http://www.earlychildhoodpartnerships.org)  
Office of Child Development (OCD)  
University of Pittsburgh  
5947 Posvar Hall  
Pittsburgh, PA 15260  
bagnatos@pitt.edu  
412-389-2372