

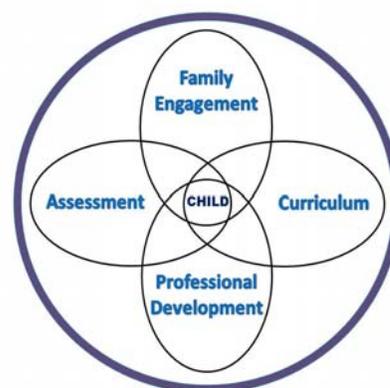
Evidence-based Program for the Integration of Curricula (EPIC)

John Fantuzzo, Vivian Gadsden & Paul McDermott, University of Pennsylvania Graduate School of Education

What is EPIC?

The Evidence-based Program for the Integration of Curricula (EPIC) is a comprehensive early childhood program specifically designed for preschool children from an underserved, minority urban population. Developed and scientifically validated through a federal grant from the Interagency School Readiness Consortium (IRSC),¹ EPIC takes an *intentional, systematic* and *intense* approach to skill development, assessment, family involvement, and professional development in early childhood education. EPIC maximizes early learning by using a child-centered approach that draws on all of the resources surrounding the child: classroom, home, and learning community. The comprehensive EPIC program includes:

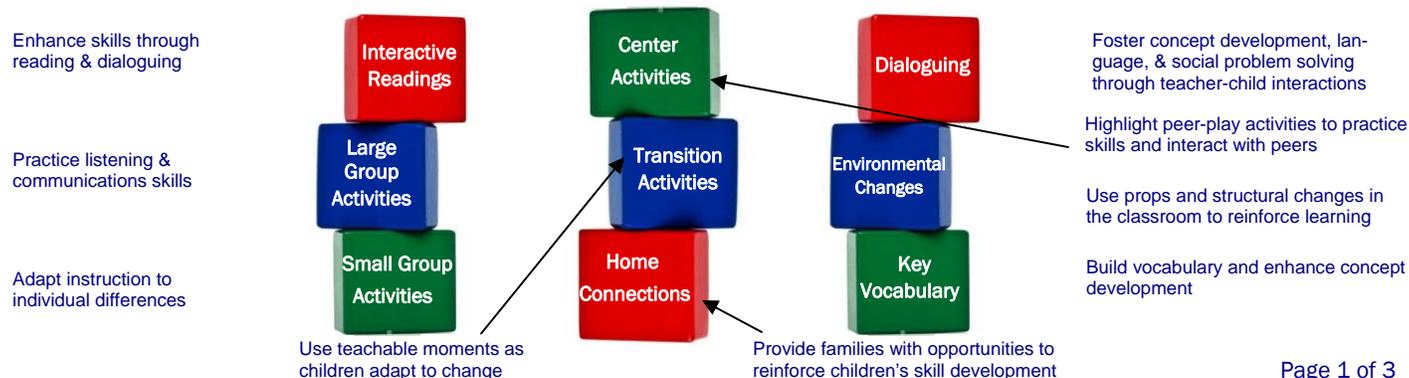
- A built-in, scientifically-based, formative assessment of school-readiness skills that allows teachers to measure progress and tailor instruction to individual patterns of development.
- A scientifically-based, developmentally sequenced curriculum that integrates early literacy, language, mathematics, social emotional and approaches to learning skills into a coordinated set of learning experiences.
- An evidence-based family engagement process that includes identification of nurturing home educators who work on a routine basis to reinforce classroom instruction through home-based learning activities, and
- A learning community model of professional development that supports teachers' mastery and promotes sharing of best practices and leadership development based on tested distributed leadership principles.



EPIC Integrated Curriculum

The EPIC Integrated Curriculum is built upon an evidence-based scope and sequence that *intentionally* and *systematically* focuses on the development of four comprehensive sets of skill areas—mathematics, language, literacy, and approaches to learning—across five levels of skill development. The integrated curriculum meets the National Head Start Indicators and Pennsylvania State Standards for Early Childhood Education.² The curriculum fosters a robust, *intense* learning environment by maximizing the learning opportunities within the early childhood classroom. Routine, developmentally-appropriate classroom experiences, called Building Blocks,³ structure daily and weekly learning activities. These activities intentionally emphasize skill development in a way that engages students, educators, and families across all 8 curricular units.

The EPIC Building Blocks



EPIC Integrated Assessment

The EPIC Integrated Check-Ins (ICIs) are standardized, direct assessments nested into the EPIC Curriculum. These assessments measure individual development of 26 skills.⁵ These skills comport to the National Head Start Indicators as well as Pennsylvania State Standards for Early Childhood Education.⁶ EPIC ICIs assess skills on a developmental continuum of five levels of skill attainment, with each skill measured at three equal intervals during the academic year. EPIC assessments have been validated against nationally standardized measures of cognitive and social development. The ICI assessments are used in three primary ways within the EPIC program:

- To measure individual differences in skill level within children and among children over time
- To inform teachers' use of curriculum according to individual child needs
- To monitor progress of individual children and whole classrooms, enabling quality conversations with families and the EPIC Learning Community

They provide a built-in portfolio of assessment in a way that has been cross-referenced with *The Work Sampling System*.⁷

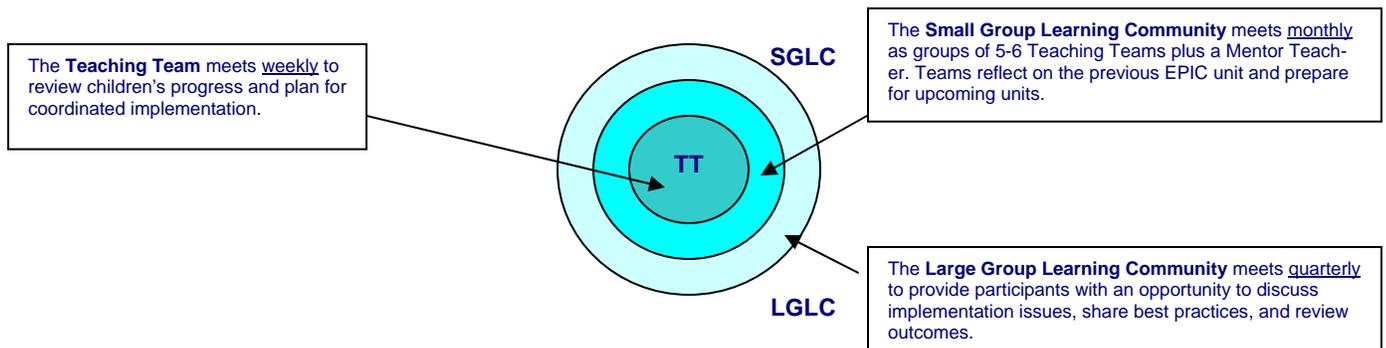
EPIC Professional Development

The EPIC Learning Community is designed as a supportive environment where educators at multiple system levels come together throughout the year to share their implementation experiences, to problem solve, and to contribute to the knowledge and experience of colleagues. The EPIC Learning Community, like the EPIC Curriculum, provides rich, ongoing learning opportunities to support educators' professional development and build efficacy and leadership. Drawing heavily on distributed leadership principles,⁸ educators' experiences are placed at the center of a dynamic Learning Community, which recognizes that

- Instructional leadership is a shared community undertaking
- Instructional improvement requires multiple sources of expertise to work collaboratively around a common goal of student achievement
- Leadership is distributed as teaching teams interact with rich, evidence-based curriculum content and valid assessments of children's achievements

EPIC's multi-level Learning Community engages the Teacher, Teacher Assistant, Mentor Teacher, and Educational Coordinator in a relationship built on reciprocity and shared common purpose. The figure below shows the three system levels of the Learning Community that these individuals form: at the center of the Learning Community is the Teaching Team (TT) which consists of the classroom Teacher and Teaching Assistant; supporting each TT is a Small Group Learning Community (SGLC) that consists of 5-6 Teaching Teams and a Mentor Teacher, an experienced EPIC Teacher trained to help TTs implement EPIC while they concurrently implement EPIC in their classrooms; and the Large Group Learning Community (LGLC) is formed of all the TTs, and the Educational Coordinator. LGLC supports the SGLC and Mentor Teachers; it also provides a forum for sharing best practices.

The EPIC Learning Community



The Evidence Base of EPIC

During the development phase of the integrated curriculum, developers looked at data collected on a Head Start population at multiple times across the year with individually administered standardized assessments of each of the three primary cognitive areas (mathematics, language, and literacy).⁹ These data were used to identify the sequence of skills that children were acquiring across time to provide an evidence base for the developmental sequence of skill mastery. These skill sequences were used to inform the integration of skills, aligning skill levels across skill areas. Curriculum contents were then sequenced so that the main foci of lessons comported to the empirical levels at which most children were functioning across time. Longitudinal studies of preschool learning behaviors provided the evidence base for the approaches to learning component of the scope and sequence.¹⁰

EPIC was validated with a sample of 2,685 children across 85 classrooms in a large, urban public school district and was found to produce superior language and mathematics outcomes when compared to the stand alone DLM Early Childhood Express.¹¹ Children in EPIC classrooms were found to have outperformed their peers in DLM classrooms, regardless of age, gender, or race/ethnicity where both conditions were implemented with comparable fidelity and resources.

- Across a comprehensive set of mathematics skills, children participating in EPIC demonstrated better overall skill outcomes than children in DLM classrooms. Children with special needs in EPIC classrooms evidenced significantly greater growth in mathematics compared to children in the comparison condition.
- In language skills, children receiving EPIC evidenced superior listening comprehension outcomes compared to children in DLM classrooms. EPIC compared well against DLM in vocabulary and alphabet knowledge outcomes, as both evidenced significant growth rates in these skill areas.
- A closer look at changes within the EPIC condition revealed that there were distinct differences between child who are dual-language learners (DLL), children with special needs, and 3 year-old preschool children and their peers across all skill areas in ICI assessment. The children within these special populations evidenced comparable levels of growth to their non-DLL, non-special needs, and 4 year-old peers from the fall to the spring of the academic year, demonstrating the value of EPIC for all children in the classroom.
- Building a strong relationship with children's home context is important and is strengthened with Home Connections, weekly family assignments that are completed for 37 consecutive weeks across the year. Home Connections were returned at an average rate of 75% across six EPIC units, with a range of return from 71-80% during the trial year. These figures speak to the intentional and intense approach to family involvement through the academic year.
- As part of their reflective practice, Teaching Teams anonymously report their satisfaction with each curricular unit. Across six EPIC units, these reports showed that 98% of teachers were 'satisfied' or 'very satisfied' with their experience. This figure reflects successful efforts to fit EPIC into educators' existing context without additional resources or personnel.

Further Development of EPIC

The EPIC Program is dynamic in nature and, therefore, development is ongoing. A new measure of learning behaviors developed in part with EPIC research, called the Learning to Learn Scale (LTLs),¹² will provide precise input to enhance the scope and sequence of the curriculum. Future qualitative studies will explore the EPIC Home Connections in order to strengthen the relationships between school and families, while further validity studies will be completed on the ICI assessments.

Finally, the future of EPIC involves replicating the outcomes of the scientific trial as well as implementing the EPIC program on a larger regional scale. To build on the successful development and implementation of EPIC, the research team, lead by Dr. John Fantuzzo as the principal investigator, is seeking partnerships with publishers and funders to forge the future of the EPIC program.

¹ ISRC provided funding by the following agencies: the Administration for Children and Families; the Assistant Secretary for Planning and Evaluation; the U.S. Department of Education: Office of Special Education Programs; the Institute for Educational Sciences; and the National Institute of Child Health and Human Development

² The Head Start Path to Positive Child Outcomes, 2003; Pennsylvania Learning Standards for Early Childhood, 2009

³ Minney and Fantuzzo, 2010

⁴ Pianta, La Paro, & Hamre, 2008

⁵ Minney and Fantuzzo, 2010

⁶ The Head Start Path to Positive Child Outcomes, 2003; Pennsylvania Learning Standards for Early Childhood, 2009

⁷ Meisels, Marsden, Jablon, Dorfman, & Dichtelmiller, 2001

⁸ Spillane, 2006

⁹ The Learning Express, TERA, TEMA, OWLS, COR

¹⁰ Fantuzzo, Bulotsky-Shearer, McDermott, McWayne, Frye, & Perlman, 2007

¹¹ Fantuzzo, Gadsden, & McDermott, 2009

¹² McDermott & Fantuzzo, 2000