

**Abstract Title Page**  
*Not included in page count.*

**Title:** Measuring Fidelity in Preschool Interventions: A Microanalysis of Fidelity Instruments Used in Curriculum Interventions

**Author(s):** Catherine L. Darrow, Vanderbilt University

## **Abstract Body**

*Limit 5 pages single spaced.*

### **Background/context:**

*Description of prior research, its intellectual context and its policy context.*

Without defining and assessing the degree to which an intervention was implemented as intended (i.e., implementation fidelity), claims of treatment effectiveness may be unjustified. Despite the value of measuring implementation fidelity, recent reviews of studies in K-12 school settings have illustrated that many inconsistencies and omissions in measuring fidelity exist (Dusenbury, Brannigan, Falco, & Hansen, 2003; O'Donnell, 2008).

No review of preschool studies and the ways in which they assess fidelity of implementation has yet been published. Therefore, it is difficult to determine if the problems inherent in K-12 studies are also evident in preschool interventions. The movement to establish effective preschool programs has gained momentum. The fact that some children are not prepared to enter kindergarten is a source of great concern for educational researchers, practitioners, and policy makers. This concern prompted the U.S. Department of Education to invest millions of dollars in grants for evaluations of preschool curricula (Barnett, 2008). With increased funding for such studies and heightened attention to the importance of implementation fidelity comes the emergence of a variety of fidelity instruments. However, the increase in number of fidelity instruments does not guarantee that these measures effectively assess implementation.

### **Purpose / objective / research question / focus of study:**

*Description of what the research focused on and why.*

This paper examines measures used by studies associated with Preschool Curriculum Evaluation Research Initiative (PCER) funded by the Institute of Education Sciences. Analysis of 17 measures of fidelity used by 13 curriculum interventions highlights how research in preschools is and is not measuring fidelity of implementation. The following research questions are pursued:

1. In what ways do the measures used in these studies represent the three primary elements of implementation: (a) adherence, (b) exposure, and (c) participant responsiveness?
2. Do studies effectively use measures to differentiate between teachers' fidelity to crucial elements of the curriculum and teachers' general instructional quality (i.e., high fidelity as compared to good teaching)?

### **Population / Participants / Subjects:**

*Description of participants in the study: who (or what) how many, key features (or characteristics).*

Fidelity measures were gathered from 13 research studies funded by the Institute of Education Sciences' Preschool Curriculum Evaluation Research Initiative (PCER) and located in Tennessee, North Carolina/Georgia, New Hampshire, Florida/Kansas/New Jersey, Texas, Virginia, California/New York, Wisconsin, Missouri, New Jersey, and Florida. This paper

evaluates instruments representing 12 separate curricula implemented within these 13 interventions.

### **Data Collection and Analysis:**

*Description of the methods for collecting and analyzing data.*

Seventeen fidelity instruments were coded on the instrument and item level (see Table 1 in Appendix B for a list of fidelity measures used by each study). At the instrument level, each measure was coded for the inclusion of teacher interview, guidance on optimal length of observation, and opportunities for observers to document the length of observed activities. At the item level, the coding schema identified individual items that included direct reference to the targeted curriculum and items that provided some means to assess the quality of a particular feature of the environment or instruction. Additionally, each item was then designated as relating to either structural elements of the classroom setting or instructional features associated with teacher or child behaviors.

### **Findings / Results:**

*Description of main findings with specific details.*

Results show that few studies use measures that comprehensively represent the three primary elements of implementation. Only 5.7% of all items across instruments (N = 1,113 items) and only 5 of the 16 measures contained any assessment of adherence. Likewise, less than half of the studies provided measures representing children's exposure to the curriculum. Directions included in the measures often lacked guidance on the ideal length of the observation and frequently omitted space for observers to indicate the total length of observation. Only 9 of the 15 measures analyzed at the item level included scheduling items. Thus, few measures evaluated how well teachers followed guidance on the intended length and sequence of curricular activities. Additionally, only 3 of the 16 fidelity measures included representation of teacher responsiveness in the form of a teacher interview. The included fidelity measures virtually ignored children's response to structural and instructional elements of the interventions.

### **Conclusions:**

*Description of conclusions and recommendations based on findings and overall study.*

Overall, analysis of these 16 fidelity measures reveals that the corresponding preschool studies insufficiently measured the primary components of fidelity. In many cases, the measures used in these studies were more effective at assessing general quality of instruction and less successful at evaluating fidelity of implementation. Despite increased attention, measurement of implementation fidelity in preschool research continues to be challenging and development of measures that more comprehensively represent implementation fidelity more is essential.

## **Appendices**

*Not included in page count.*

### **Appendix A. References**

*References are to be in APA version 6 format.*

- Barnett, W. S. (2008). Federal Pre-K curriculum study shows few stand-outs. *Preschool Matters*, 6, 4-5.
- Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W. B. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research*, 28, 237-256.
- Hulleman, C. S., & Cordray, D. (2009). Moving from the lab to the field: The role of fidelity and achieved relative intervention strength. *Journal of Research on Intervention Effectiveness*, 2(1), 88-110.
- O'Donnell, C. L. (2008). Defining, conceptualizing, and measuring fidelity of implementation and its relationship to outcomes in K-12 curriculum intervention research. *Review of Educational Research*, 78(1), 33-84.

## Appendix B. Tables and Figures

*Not included in page count.*

Table 1

*Fidelity Measures Used by Study*

Study Location	Curriculum	Fidelity Measure
NH	Creative Curriculum with Ladders to Literacy	1. Ladder to Literacy Implementation Checklist (Classroom Activities) 2. Ladder to Literacy Implementation Checklist (Scaffolding)
NY & CA	Pre-K Mathematics + DLM Express	1. Early Mathematics Classroom Observation 2. Fidelity of Implementation Record Sheet 3. Classroom Obs of Early Math Environment and Teaching (COEMET)
NC, GA & NH	Creative Curriculum	1. Creative Curriculum Checklist
TX	Doors to Discovery	1. Doors to Discovery: Curriculum Fidelity Checklist 2. PCER Teacher Checklist*
TX	Let's Begin with Letter People	1. Let's Begin: Curriculum Fidelity Checklist 2. PCER Teacher Checklist*
WI	Project Approach	1. The Project Approach Fidelity Scale
MO	Project Construct	1. Project Construct: Early Childhood Observation Su (PC-ECCOS)
VA	Language Focused Curriculum (LFC)	1. LFC Fidelity Checklist
FL	DLM Early Childhood Express with Open Court Pre-K	1. DLM/Open Court Classroom Observation
FL	Literacy Express	1. Literacy Express Classroom Observation
NJ	Ready, Set, Leap!	1. Fidelity Observation

2. Classroom Lang Arts Systematic Sampling and Instructional Coding (CLASSIC)

TN	Bright Beginnings	1. Combined CC and BB checklist
----	-------------------	---------------------------------

TN	Creative Curriculum	1. Combined CC and BB checklist
----	---------------------	---------------------------------

---

\* PCER Checklist is the same for both TX studies (Doors to Discovery and Let's Begin with Letter People)