

Summary of University Consortium Studies: Methodology, Analysis and Quality Control

The National Advisory Panel asked First Things First to provide an overview of the items of concern with the initial evaluation studies undertaken by the University Consortium. The items of concern relate to methodology, analysis and quality control. The items below are categorized by general methodological, analytic, and quality issues, and then by specific concerns about the Arizona Kindergarten Readiness Study (AKRS) and the Longitudinal Child Study of Arizona (LCSA). The university consortium's (UC's) scope of work was based on its September 2008 proposal. The issues raised below represent the perspective of First Things First staff.

The University Consortium Proposal (September 2008) set out the approach to the study which included:

- The development of a kindergarten readiness assessment for Arizona that would be piloted and vetted by a panel of experts.
- The recruitment and retention of a representative sample of participating children in the longitudinal study.
- A stratified, random sample that is matched and controlled for demographic characteristics.
- And the creation of an index of engagement to quantify exposure to FTF services to enable analysis of impact.

1. Methodology

- 1.1 The approach and methodology to identify and quantify the receipt of FTF services was not clarified.
- 1.2 An index of child/family engagement in services was not developed.
- 1.3 The data filing system was restructured, but it was not clear how it would accommodate data from children receiving multiple FTF services or non-FTF services.
- 1.4 Teachers were asked to determine whether children should be assessed in Spanish or English, but there was no description of what criteria teachers would use to make this determination, and most importantly, there was no evidence a valid procedure was adopted to identify a child's primary language. Difficulties in administering Spanish language versions of the assessment were reported to FTF, but there was no clear explanation of what difficulties were encountered or what steps could potentially be put into place to correct identified problems.

2. Analysis

- 2.1 A plan for multilevel statistical analyses had originally been proposed for the Arizona Kindergarten Readiness Study (AKRS), however, this plan was not developed or carried

out. Therefore, it was not possible to examine or understand differential school and regional influences on and contributions to child outcomes.

- 2.2 In terms of the regression analyses that were conducted for the Arizona Kindergarten Readiness Study (AKRS), a number of demographic variables were entered into the regression models, but no clear rationale was presented to justify selection of the variables. This may have been appropriate for an exploratory analyses, but not for drawing conclusions about children's school readiness.
- 2.3 Overall, the conducted analyses for the Arizona Kindergarten Readiness Study (AKRS) did not include a clear explanatory description and rationale for why a particular analytic approach was taken, or how a sequence of analyses worked together to address a particular set of questions.

3. Quality Control

- 3.1 No thorough description of quality control procedures was provided to FTF prior to January 2012.¹ For example, there was no description of how local interviewers, assessment staff, and data collectors were trained, or what steps were taken to identify or correct problems with data collection and/or ensure fidelity to interview protocols. Another example: there was no description of how inter-rater reliability was determined.
- 3.2 It was unclear whether there was effective and proactive communication that resulted in standardized approaches to data collection and methodology and decision-making across the research teams at each separate university.

4. Arizona Kindergarten Readiness Study (AKRS)

- 4.1 Kindergarten readiness was not defined or operationalized. Absent a clearly articulated, operationalized definition of kindergarten readiness; there was no explanation or justification for determining norm-referenced cut-scores for "readiness."
- 4.2 Kindergarten assessment results did not include a clear description or explanation of developmental factors and other issues of relevance needed to accurately interpret findings.

¹ As agreed, at the end of January 2012, FTF received the following documents from the University Consortium. These documents are currently under review by FTF:

- The finalized data set including all data collected as part of University Consortium activities.
- Operations manuals for LCSA.
- Codebooks defining variable names for all assessments.

- 4.3 Screening tools and out-of-age-range assessment tools were used without explanation or rationale as to why these would be reliable and valid kindergarten readiness assessments, or what specific readiness domains each would assess.
- 4.4 There was lack of clarity regarding the timeline for including Research-based Early Math Assessment (REMA) data; and the REMA was administered without established norms.
- 4.5 There was a proposed change which would result in a shift from using the REMA to using the Test of Early Mathematics Ability (TEMA), but without the inclusion of appropriate analyses that could have provided a rationale for the proposed change.
- 4.6 Teacher and child guardian questionnaires were developed to obtain indicators of school readiness; no report on item development procedures, analytic plans, pilot study results, or psychometric properties of the readiness scales was submitted.
- 4.7 The Devereux Early Childhood Assessment (DECA) was used, even though (a) its upper age bound is five years old, younger than the oldest FTF children in the kindergarten sample, (b) the developer did not describe the DECA as appropriate for general populations of kindergarten children, and (c) there was no explanation of how it corresponded to an operationalized definition of kindergarten readiness, and (d) there was no discussion of possible ceiling effects or other issues. In addition, there was no clear explanation of how scores would be interpreted from the Phonological Awareness Literacy Screening (PALS-Pre-K and PALS-K).

5. Longitudinal Child Study of Arizona (LCSA)

- 5.1. Lack of presentation of specific evaluation designs that would allow for causal inferences.
- 5.2. Lack of demonstrated investigative capacity to design, execute, and usefully interpret the more-complex data analyses needed for fulfilling the purposes of the LCSA.
- 5.3. Sample recruitment approaches and the ultimate representativeness of the LCSA sample was a concern. Key concerns were nonrandom refusals and incomplete assessments.
- 5.4. In general, there was a lack of clarity on procedures to quantify service dosage or document child/family participation in FTF services for data collected, especially data collected outside of child care centers.