

Abstract Title Page
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Title: Methods that Examine the Extent to Which the Quality of Children's Experiences in Elementary School Moderate the Long-Term Impacts of Head Start

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Abstract Body

Limit 4 pages single-spaced.

Background / Context:

Description of prior research and its intellectual context.

The goals of the Head Start Impact Study (HSIS) are to: 1) determine the impacts of Head Start on children's school readiness and parental practices that support children's development, and 2) to determine under what circumstances Head Start achieves its greatest impacts and for which children (US Department of Health and Human Services, 2010). The HSIS includes a nationally-representative sample of newly entering 3- and 4- year old children from 84 grantee/delegate agencies who were randomly assigned to either have access to Head Start or to a control group who did not have access to Head Start but could enroll in other early childhood programs. Results of prior analyses that address the first goal of the HSIS found benefits for children at the end of Head Start that were concentrated on language and literacy skills for the 4-year-old group and benefits at the end of Head Start on cognitive, social-emotional, health, and parenting outcomes for the 3-year old group. However, the early advantages found at the end of Head Start on most of these outcomes were non-significant by the end of kindergarten and first grade.

Purpose / Objective / Research Question / Focus of Study:

Description of the focus of the research.

The second goal of the HSIS is to identify the circumstances under which Head Start achieves its greatest impacts, and one possible explanation for the largely non-significant effects at the end of kindergarten and first grade has to do with the quality of children's experiences in elementary school. For example, under conditions of high quality experiences in elementary school, the early advantages for children in Head Start may be diminished because children in the control group "catch up". Alternatively, low quality experiences in elementary school may have a stronger negative impact on development for those children in Head Start compared to children in the control group, thereby, detracting from the prior gains attributed to Head Start. The purpose of this presentation is to describe the methods used to examine the extent to which the impacts of Head Start on children's cognitive and social-emotional outcomes at kindergarten, first grade, and third grade may be moderated by the quality of children's experiences during elementary school.

Setting:

Description of the research location.

The settings that are addressed in this presentation include the 84 grantee/delegate agencies within which random assignment originally occurred, as well as the Kindergarten, first grade, and third grade classrooms in which the study participants subsequently enrolled.

Population / Participants / Subjects:

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

(May not be applicable for Methods submissions)

Participants include 2,559 3-year olds and 2,108 4-year olds who were randomly assigned into Head Start or a control condition. The racial/ethnic composition of the 3-year-olds was Black children 32.8%, Hispanic children 37.4%, and White/other children 29.8%; and the racial/ethnic composition of the 4-year-olds was Black children 17.5%, Hispanic children 51.6%, and White/other children 30.8%.

Intervention / Program / Practice:

Description of the intervention, program, or practice, including details of administration and duration.
(May not be applicable for Methods submissions)

Head Start is a federally-funded preschool program that provides comprehensive services that include preschool education; medical, dental, and mental health care; nutrition services; and efforts to help parents foster their child's development.

Significance / Novelty of study:

Description of what is missing in previous work and the contribution the study makes.

The intent to treat analyses testing impacts of Head Start do not consider the potential role that children's school experiences after Head Start may play in affecting the estimated treatment effects. This presentation describes considerations that were taken to explore the conditions in elementary school that may magnify or reduce these estimated impacts on children's long-term outcomes.

Statistical, Measurement, or Econometric Model:

Description of the proposed new methods or novel applications of existing methods.

The first stage in examining the potential moderating effects of elementary school quality on the impacts that Head Start has on children's development was identifying and developing measures that align with definitions of high quality elementary school. We selected measures for inclusion using the following criteria: (1) there is evidence from prior research demonstrating that each measure is empirically associated with children's development; (2) the measures were assessed using similar methods at each of the three time points; and, (3) the measurement properties for each scale achieved acceptable levels of internal consistency reliability. Based upon these criteria, the following five measures were constructed at each of the three grade levels: exposure to reading content, exposure to math content, student-teacher closeness, student-teacher conflict, and the percentage of children in the school that achieved proficiency based on statewide testing. In addition to developing measures of quality at each grade level, we developed two sets of cumulative measures of quality. Specifically, we developed measures of the quality of children's cumulative experiences at first grade, by computing the average of the five measures at kindergarten and first grade; and we developed measures of the quality of children's cumulative experiences at third grade, by computing the average of each of the five measures at kindergarten, first grade, and third grade.

Next, we plan to conduct a set of analyses to examine whether the quality of elementary school that children attended was impacted by whether they were in the Head Start or comparison condition; this will determine whether we can treat the moderators as exogenous variables in the subsequent test of moderation.

Our methodological approach to test for moderation involves adding the following terms to the original models testing impacts of Head Start on each of five outcomes (receptive language, letter-word identification, applied problem solving, problem behaviors, and social skills and positive approaches to learning): the five measures of quality and the interaction between study condition and each of the five measures. We will conduct this analysis examining kindergarten, first grade, and third grade outcomes using only the elementary school experience measures that were collected during the specific grade. We will then repeat these analyses for first grade and

third grade outcomes by using the cumulative measures of quality that summarize the child's prior experiences. Analyses will be conducted separately for the cohort of 3-year-olds and the cohort of 4-year-olds.

Usefulness / Applicability of Method:

Demonstration of the usefulness of the proposed methods using hypothetical or real data.

Methods of examining the moderation of preschool impacts by later school experiences are relevant to a wide variety of experimental trials focused on early intervention (e.g., home visiting programs) and early schooling (e.g., reading curriculum in kindergarten). The 3-step process followed in this demonstration (measure selection and refinement, confirmation that elementary school experiences can be treated as exogenous variables, and moderation analyses) will be made relevant to other applications.

Research Design:

Description of the research design (e.g., qualitative case study, quasi-experimental design, secondary analysis, analytic essay, randomized field trial).

(May not be applicable for Methods submissions)

The HSIS was an experimental, randomized controlled trial with children randomly assigned to Head Start or a control group prior to entering preschool.

Data Collection and Analysis:

Description of the methods for collecting and analyzing data.

(May not be applicable for Methods submissions)

In the spring of each year, children were directly assessed with normed, standardized tests to determine their receptive vocabulary (Peabody Picture Vocabulary Test), reading (Woodcock-Johnson Letter-Word Identification), and math (W-J Applied Problems) skills. Parents provided ratings of children's problem behaviors and social skills/approaches to learning. In terms of children's elementary school experience, academic proficiency is measured at the school level as the proportion of students who met basic proficiency levels on the state standardized test. In addition, teachers report the amount of time spent in reading and math instruction at the classroom level, as well as the quality of their relationship with each study child.

Findings / Results:

Description of the main findings with specific details.

(May not be applicable for Methods submissions)

Not applicable.

Conclusions:

Description of conclusions, recommendations, and limitations based on findings.

There are now many promising preschool interventions with known experimental impacts on children's developmental outcomes during the preschool year. However, there continue to be many questions about whether these impacts are sustained into elementary school, as children scatter into a variety of school environments. The intention here is to provide a roadmap for how to approach measurement and analysis when examining moderation of preschool intervention effects on child outcomes by later school and classroom experiences. Though unavailable at this time, substantive findings will eventually provide important information about the role of

elementary school quality in moderating Head Start's impacts on children's development through third grade.

Appendices

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Appendix A. References:

References are to be in APA version 6 format.

U.S. Department of Health and Human Services, Administration for Children, Youth, and Families. (January, 2010). *Head Start Impact Study: Final Report*. Washington, DC: Author.