

Paper 3 Title: Implementation of the Zoology One curriculum in the efficacy study

Authors: Fink, R., Suwak, K., Gray, A.

Background/Context: Some adaptation of curricular materials and guides on the part of teachers is assumed, particularly within less-scripted curricular products and approaches. Understanding not only the types of adaptations teachers make but also the reasons why teachers believe those adaptations to be necessary contributes to our knowledge about implementation and can inform curricular development as well as how to best support and coach classroom teachers. In the context of an efficacy trial, as is the case with the Zoology One evaluation, understanding how and why teachers adapted the intervention can also provide insights into the observed student outcomes.

Purpose/Objective/Research Questions: This paper reports on fidelity to the Zoology One curriculum, and examines the extent to which teachers reported adaptations and the reasons and rationales for making those adaptations. We will share results from mixed-methods analysis of data collected from teachers during the year in which they were participating in the Zoology One efficacy trial.

Setting: School District of Philadelphia.

Population/Participants/Subjects: Participants in the evaluation of *Zoology One* include 71 kindergarten teachers in 21 schools.

Intervention/Program/Practice: Zoology One is an integrated science and literacy curriculum for kindergarten. It comprises a 120-minute, daily, integrated instructional block that incorporates evidence-based literacy instruction and science immersion across the entire school year. Zoology One includes four 9-week units: An introductory unit that teaches routines and structures; Zoology; Ecology; and Entomology. All instructional elements are aligned with the Common Core standards and Next Generation Science Standards.

Research Design: This paper uses qualitative data from teacher interviews conducted with implementing teachers who were implementing the Zoology One curriculum across two cohorts.

Data Collection and Analysis: All teachers implementing Zoology One were surveyed and asked to complete daily logs to collect fidelity data. Response rates were high, and a fidelity computation was assessed based on self-reported implementation of the components of the curriculum. 12 teachers in Cohort 1 and 16 teachers in Cohort 2 were interviewed in the Spring of the school year in which they were implementing the curriculum as part of the efficacy trial. All interviews were conducted in-person by a member of the research team and were guided by a semi-structured interview protocol designed to understand teachers' experiences with and perception of the Zoology One curriculum. All interviews were transcribed verbatim and uploaded into a computer assisted qualitative data analysis software, Dedoose. A team of three researchers engaged in inter-rater reliability practices before coding the set of transcripts.

Findings and Results: Fidelity to the program design overall was high, with variations in some areas. We examined reasons for variation in implementation. Two implementation factors were most influential in teachers' decisions about making adaptations to the curriculum: (1) teachers' assessments of students' needs and interests and (2) constrained instructional time or shifting teaching schedules. Teacher beliefs were an important source of variation, along with availability of support staff in the classroom who

helped students engage with various aspects of the Zoology program (e.g., guided reading, independent reading, writing).

Conclusions: This paper offers a demonstration of fidelity analysis for a curriculum, and highlights the importance of understanding why teachers make certain adaptations during curriculum implementation. Teachers' beliefs about their students and pedagogy influence these decisions, as do constraints related to time and availability of support staff.