Paper 3:
Abstract Title Page

Title: Impacts of a Discussion-based Academic Language Program on Classroom Interactions in 4th through 7th Grades

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Abstract Body

Background / Context:

Many youngsters have the opportunity to develop academic language skill in non-academic contexts—in dinner-table conversations with engaged adults, while reading for pleasure or information, or through other sources of incidental learning. For many others, though, access to such skills is limited to the classroom—they are entirely dependent on the richness of the school language environment to support their acquisition of academic language. If they are poor or reluctant readers, then they are further dependent on the oral language environment of the classroom—the opportunity to hear and respond to challenging teacher questions, to participate in oral discussions, arguments, debates, and exchanges of opinions, and to hear oral definitions, explanations, and expression of alternative perspectives.

An abundance of research has found classroom interactions to have effects on children's academic outcomes. High quality classroom interactions have been associated with greater perceived cognitive competence, internal locus of control, mastery motivation and academic performance, including growth in literacy (Hamre & Pianta, 2005; Pianta, Belsky, Houts, Morrison, & the NIHCH ECCRN, 2007; Ryan & Grolnick, 1986; Toro, 1985). This research highlights the potential of high quality classroom interactions for promoting children's academic success; however, much of this research has focused on elementary school classrooms. More research is needed at the middle school level and across the elementary school to middle school transition, in particular, given the typical reduction in close teacher-student relationships and participatory classroom instructional activities found to characterize that transition (e.g., Roeser, Eccles, & Sameroff, 2000). Research has also shown that standards-driven instruction that tends to be decontextualized from skills and knowledge that middle school students find relevant to their lives are directly related to student disengagement and alienation in middle schools (Eccles, et al., 1997, Shouse, 1996). Observational studies have also demonstrated that for early adolescents, especially those attending schools serving low income youth, classroom interactions are generally low quality (Pianta et al., 2007). Lastly, assessments of classroom interactions are critically absent from many evaluations of classroom and school-based programs and interventions, despite the fact that many of these programs have theories of change in which the classroom is directly implicated.

Purpose / Objective / Research Question / Focus of Study:

In this paper we present an exploratory analysis of treatment-control differences in the quality of classroom interactions in 4th through 7th grade urban classrooms. WG is a research-based academic language program for middle school students designed to teach novel vocabulary and literacy through language arts, math, science, and social studies classes. Previous research found significant positive effects of WG on classroom discussion quality (Lawrence, Crosson, Paré-Blagoev, & Snow, 2015) and this study extends that work by examining whether specific classroom interactions that are integral to the WG program, such as those promoting analysis and inquiry or engaging adolescent perspectives, are higher quality in WG classrooms as compared to control classrooms.

Setting:

As part of the IES-funded project *Catalyzing Comprehension through Discussion and Debate* (CCDD), the data for this study were collected as part of the impact evaluation of Word Generation conducted with students in 4th through 7th grades in K-8 urban schools across two states.

Population / Participants / Subjects:

The sample includes ~3,671 students and is socio-demographically diverse, including 85% low-income, 39% Latino/a, and 35% white students in one district and 91% low income and 76% black students in the second district. Classroom observations were conducted in approximately 130 classrooms each wave of data collection.

Intervention / Program / Practice:

Word Generation (WG) is a tier-one, discussion-based program for middle school students designed to build academic literacy and academic practices through language arts, math, science, and social studies classes. The program consists of weekly units that introduce 5 high-utility target words through brief passages designed to spark active examination and discussion of contemporary issues. WG was designed with the understanding that promoting classroom discussion can result in particular academic benefits, such as improved word knowledge, complex reasoning, and perspective-taking. Each lesson is constructed around a text that provides a bit of information about a controversial issue, and a few arguments on either side of the issue.

Research Design:

The IES funded evaluation of WG is a school-level experimental study that includes two cohorts of schools randomized to treatment and control conditions. The first cohort has been studied for three years and the second cohort for two years. Twenty four schools in total were randomized within the four districts, with pairs of schools matched on several characteristics such as enrollment, socio-demographics, and standardized test scores. The program was implemented and data were collected on all students in grades 4 through 7. Classroom observation data were collected in classrooms from cohort 2 only. This cohort includes 18 schools (9 treatment and 9 control).

Data Collection and Analysis:

Classroom observations were conducted and were also audio-recorded once in the Fall, and once in the Spring for two years. Word Generation teachers were observed twice each wave: once while implementing the WG program and once while engaged in regular classroom practice (implementing other curricula) with the same students. Control teachers were observed on one occasion each wave, while engaged in regular classroom practice. The quality of classroom interactions was coded by research assistants who were trained and certified as reliable in the Classroom Assessment Scoring System:

CLASS-Upper Elementary. The Classroom Assessment Scoring System, Upper Elementary (CLASS; Pianta, Hamre, & Mintz, 2012) is an observational instrument developed to assess classroom interactions in upper grade classrooms. The measure is based on developmental theory and research suggesting that interactions between students and adults are the primary mechanism of student development and learning .The CLASS scales are based on *interactions* of teachers and students in the classroom, assessing the quality of teachers' social and instructional interactions with children, social interactions among the children, and the intentionality and productivity evident in classroom settings. The following dimensions of classroom interactions were coded in all four waves: *Regard for Adolescent Perspectives* (i.e., the degree to which teachers' interactions with students and classroom activities place an emphasis on students' interests, motivations, and points of view), *Content Understanding* (i.e., both the depth of lesson content and the approaches used to help students comprehend the framework, key ideas, and procedures in an academic discipline), *Analysis & Inquiry* (i.e., the degree to which the teacher facilitates students' use of higher level thinking skills, such as analysis, problem solving, reasoning, and creation through the application of knowledge and skills), *Quality Of Feedback* (i.e., the degree to which feedback expands and extends learning and understanding and encourages student participation), and *Instructional Dialogue* (i.e., the frequency and distribution of cumulative and content-driven exchanges, and dialogue facilitation strategies).

Findings / Results:

In both Fall and Spring of Year 1, we found no significant differences in the quality of classroom interactions between WG classrooms with teachers engaged in regular classroom practice and control classrooms with teachers engaged in regular classroom practice. However, WG classrooms observed while implementing WG were rated as having significantly higher quality interactions than control classrooms for several dimensions: Regard for Adolescent Perspectives, Content Understanding, Analysis and Inquiry, Instructional Learning Formats, and Instructional Dialogue (Fall only). In both Fall and Spring of Year 2, WG classrooms observed while implementing WG were rated as having significantly higher quality interactions than control classrooms for the following dimensions: Regard for Adolescent Perspectives, Content Understanding, Analysis and Inquiry, Quality of Feedback, Instructional Learning Formats (Spring only) and Instructional Dialogue. In Year 2, both Fall and Spring, we also found carryover effects. Significantly higher quality of classroom interactions were observed in WG classrooms with teachers engaged in regular classroom practice as compared to control classrooms on the following dimensions: Regard for Adolescent Perspectives, Analysis and Inquiry, Quality of Feedback (Fall only), and Instructional Dialogue (Fall only).

Conclusions:

These results provide evidence that classrooms utilizing the Word Generation program are characterized by higher quality classroom interactions, including specific classroom interactions that reflect key program ingredients, such as the selection of content and activities that are meaningful to adolescents and the emphasis on analysis and reasoning. When schools were in the second year of program implementation there were also higher quality classroom interactions

observed in WG teachers' classrooms when they were implementing other curricula, as compared to control classrooms, suggesting that changes in teachers' practices and classroom dynamics carried over into other parts of the school day when WG was not being implemented.

Appendices

Appendix A. References

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