

Abstract Title Page
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Title: Conducting Rigorous Research in Multilingual Context: A Randomized Field Trial of the Good Behavior Game

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Abstract Body
Limit 4 pages single-spaced.

Background / Context:

Description of prior research and its intellectual context.

The Good Behavior Game (GBG) is a classroom-based behavior management strategy aimed at reducing aggressive/disruptive behavior and socializing children into the role of student. GBG, delivered in first and second grades, has been shown to reduce rates of substance abuse and other deleterious outcomes into young adulthood (Brown, C.H. et al 2007, Ialongo, et al. 2001, Kellam, S.G. et al, 2008 and Poduska, J.M. et al. 2008, Kellam, S.G. et al (1998), Ialongo, N.S. et al. 1999), especially for students that are considered as aggressive at baseline by their teachers. Despite GBG being recognized as an evidence-based prevention program (National Registry of Evidence-based programs and Practices, NREPP, <http://nrepp.samhsa.gov/>), published data to date is mostly limited to African American and Anglo populations that are native English speakers. This study is a four-year IES Goal 3 project (R305A090446, PI Poduska) that was designed to understand the level of professional development (PD) required for teachers to implement and sustain the Good Behavior Game (GBG), a universal preventive intervention. Two models of PD, *GBG Basic*, which provides group-based pre-implementation training to teachers supplemented by a group-based booster session, and *GBG w Coach*, which has the same activities under *GBG Basic* plus a coach who works directly in the classroom with the teacher, will be compared with each other and with a control condition, in a randomized field trial. This trial takes place in multilingual context of Houston Independent School district.

Purpose / Objective / Research Question / Focus of Study:

Description of the focus of the research.

This paper describes the design and preliminary results regarding the testing of the GBG in schools that vary in their proportion of Latinos and the use of bilingual instruction. We discuss how working with multicultural schools/school district has influenced the design, intervention and training, data collection, and analytic approaches of a randomized field trial testing the impact of GBG under various models of professional development for teachers. We will also present preliminary impact results from the first cohort (from school year 2010-2011).

Setting:

Description of the research location.

The study is taking place in partnership with the Houston Independent School District (HISD) and the Houston Federation of Teachers—the teachers’ union. In 2009-2010 62 percent of enrolled students were Hispanic, 27 percent were African American and 8 percent were White. In addition, 31 percent of students were classified as LEP and 80 percent were classified as having free/reduced lunch status. HISD is required to provide bilingual education programs to all elementary LEP students whose home language is spoken by more than > 20 students at the same grade level in the entire school district. As results HSID has created three different tracks for students whose home language is Spanish: Traditional, Developmental, and Two-Way Bilingual Immersion Programs (TWBIP). The goal for the Traditional Program is to mainstream

students into all English Curriculum classrooms at grade 4 (if students meet exit criteria), while the Developmental and TWBI programs will graduate students to partial English Curriculum with an additional goal of bilingualism. The Developmental and TWBI programs continue in selected middle and high schools. What type of a program schools want to implement is left for them to decide. Currently TWBIP is offered in 10 (6 %) and the Developmental program in 65 (38.2 %) elementary schools.

Population / Participants / Subjects:

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

The study will include three cohorts of students and this paper will be based on the data collected from the first cohort of schools, teachers and students that participated in the study during the school year 2010-2011. The first cohort includes 12 schools with 3-7 classrooms, the total number of teachers being 54 and the total number of students being 1024. Table 1 shows the number schools and teachers that have only general education (English) classrooms, only bilingual classrooms (Spanish) or both types of classrooms. Table 2 shows the number of bilingual and regular education teachers and students included in the first cohort.

Please insert Table 1 here

Please insert Table 2 here

Intervention / Program / Practice:

Description of the intervention, program, or practice, including details of administration and duration.

The Good Behavior Game is a group-based classroom behavior management strategy that promotes classmate/peer concern for each child's positive behavior by rewarding teams with appropriate behavior. GBG also provides teachers with additional skills in classroom behavior management resulting in fewer negative interactions, reductions in aggressive, disruptive behavior, and an increase in time spent on-task. As tested in this trial GBG is built around four core elements integrating (1) classroom rules, (2) team membership, (3) monitoring of behavior, and (4) positive reinforcement to individuals and the group. GBG, delivered in first and second grades, has been shown to reduce rates of substance abuse and other deleterious outcomes into young adulthood (Kellam, S.G. et al, 2008 and Poduska, J.M. et al. 2008, Petras, H. et al 2008). However, although GBG has been proven as an effective intervention, no rigorous studies have been conducted before about the necessary supports teachers would need for high level of implementation or implementation over time. In this trial two different training models are tested: the *GBG Basic* option (2 days of initial training and one day of booster training) and the *GBG with Coach* (2 days of initial training and one day of booster training and 90 minutes of coaching every two weeks for one school year). An added complexity for this trial is the multilingual environment in which the trial takes place. The group based training was provided by English, but teachers in bilingual classrooms who were assigned to the *GBG with Coach* condition were provided a bilingual coach. In addition, all classroom materials were provided both in English and Spanish in bilingual classrooms.

Previously the intervention's effect has varied by student's baseline risk and gender, males students with elevated baseline risk benefitting most of the intervention. The intervention's effect

may also vary for different ethnic/cultural groups for variety of reasons, such as different socialization processes and behavioral norms, both for children and teachers. Although the study is not empowered to test the effect of GBG by students' language status or ethnicity, the study team has collected data that allows us to explore whether students' baseline risk varies by language status. We have also collected information from teachers regarding their attitudes and level of implementation of the GBG and will provide descriptive analysis by teachers' certification status (bilingual vs. regular education).

Research Design:

Description of the research design.

The study is a randomized control trial in which students are first randomly assigned to classrooms and classrooms are randomly assigned to two treatment conditions (*GBG basic*, *GBG with Coach*) or a control condition. The original plan was to recruit schools that have 3 first grade classrooms to create a balanced design. However, due to the large number of bilingual classrooms and the need to compare the intervention's effect by comparing randomly assigned classrooms of the same type (bilingual v. regular education), the study team adopted an unbalanced design. Table 3. shows the number of bilingual and regular education teachers and students in each of the three study conditions. The study is estimated to have 0.80 statistical power to detect a head-to-head difference in ES of 0.54 between *GBG w Coach* and *GBG Basic*, (i.e., when *GBG w Coach* has an ES of 0.66 relative to *Control* and *GBG Basic* has a small ES of 0.12 relative to *Control*).

Please insert Table 3 here

Data Collection and Analysis:

Description of the methods for collecting and analyzing data.

The data for the first cohort was collected during the school year 2010-2011. The data collected included teacher interviews about student behavior (baseline and posttest), classroom observations about student and teacher behavior (three times a year), teacher surveys administered three times a year (including background demographics, instruction and behavior management related items, and specific items about GBG for treatment condition teachers), rich implementation data from the GBG condition classrooms, and extant data from district about student demographics, referrals to services and disciplinary actions. All classroom observations in bilingual classrooms and all interviews of bilingual teachers were conducted by bilingual data collectors.

We describe the study design and sample against the epidemiological and political backdrop of the school district and explore how baseline levels of teacher reported aggressive behavior and academic achievement, and observed student behavior vary by language status. We also explore whether teachers' attitudes and perceived need for the GBG intervention systematically vary by teachers' certification status (bilingual vs. regular education) as well as classroom- and school-level variables. We will also present preliminary impact results for the first cohort and explore whether the impact varies by students' language status. We close with a discussion of the

importance of working in multicultural contexts for the next stage of prevention and implementation research.

All student level analyses will be conducted by using HLM approach that accurately accounts for correlated standard errors due to nesting in the data. Unbalanced design adds additional complexity to the analytical modeling. For the preliminary impact analysis we will use a two-level model in which students are nested within classrooms and schools are modeled as fixed effects. The teacher level analysis regarding implementation and variation in the implementation by teachers' certification will be descriptive.

Findings / Results:

Description of the main findings with specific details.

The data analysis will take place between November, 2011 and February, 2012. Our preliminary descriptive results regarding teacher interview data at baseline show that few differences exist at baseline measures between bilingual and regular education students, most noticeable difference being the difference regarding authority acceptance. According to simple descriptive statistics the bilingual teachers reported on average less of a problem with authority acceptance than teachers in general education classrooms.

Please insert Table 4 here

For the impact analysis we hypothesize that the intervention is most effective for students with elevated baseline risk factors, especially for male students with high risk. In addition, we will explore whether the effect vary by student's instructional environment (instruction in Spanish vs. English).

Conclusions:

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

Few efficacy trials in education are implemented in a controlled environment. Even though the aim of many studies is to test the main effect of a carefully delivered intervention in a stable and homogeneous environment, efficacy trials take place in real-life school district environment and must adapt. The GBG efficacy trial regarding different professional development models faced the challenge of multilingual environment, which required changing the design from balanced to unbalanced, modifying materials (translation of recruitment and intervention materials to be used in bilingual classrooms), intervention delivery, and data collection (recruitment of bilingual coaches and data collectors). These challenges were overcome through the collective efforts of a team comprised of researchers with different expertise backed by a strong partnership with the school district and support from our federal funder. Although the multicultural/bilingual context of HISD presented challenges, it also provided a unique opportunity to study variability in the intervention's implementation and in the effects of the intervention.

Appendices
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Appendix A. References

References are to be in APA version 6 format.

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Appendix B. Tables and Figures
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Table 1. Types of Schools in Cohort 1

	General education classrooms only	Bilingual classrooms only	Both types of classrooms
# of Schools	3	4	5
# of Teachers	9	12	33

Table 2. Number of Teachers and Students in Cohort 1 by Language Status

	Bilingual	Regular education
# of Teachers	32	22
# of Students	636	388

Table 3. Types of Teacher and Students By Treatment Condition

Bilingual	GBG Basic	GBG with Coach	Standard
# of teachers	12	9	11
# of students	248	182	206
General Ed	GBG Basic	GBG with Coach	Standard
# of teachers	7	9	6
# of students	130	159	99

Table 4. Descriptive Statistics Regarding Cohort 1 Baseline Sample (T-test)

Scale	Language Type	N	Mean	Std Dev	Std Err	P-value
Emotion Regulation	Bilingual	628	4.3985	1.1136	0.0444	0.4375
	General Ed	372	4.459	1.2339	0.064	
Prosocial	Bilingual	628	4.9034	0.9621	0.0384	0.536
	General Ed	372	4.9435	1.008	0.0523	
Social Competence	Bilingual	628	4.1543	1.146	0.0457	0.2957
	General Ed	372	4.232	1.1297	0.0586	
Authority Acceptance	Bilingual	628	5.1933	0.6262	0.025	0.008
	General Ed	372	5.0768	0.6941	0.036	
Hyperactive/Impulsive	Bilingual	628	4.7532	1.1531	0.046	0.8093
	General Ed	372	4.6743	1.1656	0.0604	
Attention/Concentration	Bilingual	628	4.2652	1.2829	0.0512	0.0726
	General Ed	372	4.1059	1.3945	0.0723	
Academic Readiness	Bilingual	628	4.4873	1.2993	0.0518	0.341
	General Ed	372	4.5683	1.2998	0.0674	
Socially Isolated	Bilingual	628	4.9064	0.9883	0.0394	0.2037
	General Ed	372	4.9859	0.934	0.0484	