Study 3

The Incredible Year Teacher Classroom Management Program: Initial Findings from a Group Randomized Control Trial

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Abstract Body

Background. A significant number of children in schools have mental health problems (World Health Organization, 2004). If children receive any type of mental health services, the vast majority receive these supports at school (Rones & Hoagwood, 2000). Mental health needs in children often manifest as emotional dysregulation, social incompetence, and disruptive behaviors. In turn, emotional, social, and behavior problems of students are a significant concern to teachers. For instance, research has documented that 48% of teachers reported classroom behavior problems to be their largest concern in school (Walter, Gouze, & Lim, 2006). In a recent survey of almost 300 teachers of early childhood and elementary aged children, 97% of teachers reported concerns with student behaviors in the past year and many requested additional training and supports in effective classroom management (Reinke, Stormont, Herman, Puri, & Goel, 2011). Importantly, research has demonstrated that teacher classroom practices are linked to disruptive behavior and emotional regulation (Leflot van Lier, Onghena, Colpin, 2010). Furthermore, students in classrooms where behavior is poorly managed receive less academic instruction (Weinstein, 2007) and are more likely to have long-term negative academic, behavioral, and social outcomes than students in well-managed classrooms (Ialongo, Poduska, Werthamer, & Kellam, 2001; Kellam, Ling, Merisca, Brown, & Ialongo, 1998; National Research Council, 2002). Therefore, interventions that provide training to teachers in implementation of effective classroom management have the potential to improve teacher skills and outcomes for students.

The *Incredible Years Teacher Classroom Management* program (*IY TCM*) is a universal intervention delivered to teachers to increase their use of effective classroom management strategies. The program includes research based classroom management strategies that have been associated with increases in children's social emotional development, positive teacher-student interactions, as well as decreases in student problem behavior (Snyder et al., 2011; Webster-Stratton, Reid, & Hammond, 2004).

Focus of Study. In this study we examined the efficacy of the IYTCM program in supporting teacher use of effective practices toward improving the behaviors and competence of elementary students in urban, low-income schools.

Setting. Nine elementary schools from one large urban school district were partners in conducting this study.

Study participants. The participants included 105 K to 3rd grade teachers and their students N = 1818. All teacher participants and parents of student participants provided written consent. All students provided written assent to participate in the study. Teacher participants were 22% African American, 75% White, and 3% other. The student sample was 76% African American, 22% White, and 2% other.

Intervention. The IY TCM is a universal classroom management program for teachers of students in grades Kindergarten through third grade. Teachers are trained in small groups across six full days by trained IY TCM workshop facilitators. Each workshop builds off the prior workshop content. The IY TCM content includes strategies for increasing proactive teaching, praise and encouragement, incentives, problem solving, and other strategies for increasing social competence and decreasing problem behavior (Webster-Stratton, Reid, & Hammond, 2001). The intervention uses social learning theory (Bandura, 1977) via video modeling to increase teacher learning of new skills. During each workshop, teachers view video tapes of effective strategies, role play the use of strategies, and receive feedback from the IY TCM leaders and teachers in the group. IY TCM is principle driven and therefore flexible in adapting to the skill levels and specific classroom experiences of each teacher (Webster-Stratton, Reinke, Herman, & Newcomer, 2011).

The workshop sessions provide teachers with the important initial stages of learning new skills. However, the use of ongoing coaching to support teachers in using these new skills has been described as optimal (see Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Coaching teachers in their use of

social behavioral interventions is associated with teachers' increased use of specific practices and subsequent improvements in children's behavior (Stormont, Reinke, Newcomer, Darney, & Lewis, 2013). Therefore, the IY TCM embeds coaching within the training model. As teachers learn specific skills in the group based training, they are then followed individually by a coach who conducts observations, provides performance feedback, and assists with problem solving, goal setting, and implementation of strategies from the workshops (Reinke, Stormont, Webster-Stratton, Newcomer, & Herman, 2012). Table 1 provides information on the workshop topics.

Table 1. Teacher Training Workshops Topics

- Praising, descriptive commenting, and supporting
- Using individual and group incentives to motivate children
- Proactive teaching
- Decreasing disruptive behaviors
- Problem Solving
- Persistence Coaching
- Promoting collaboration between teachers and parents
- Promoting parent involvement and empowerment
- Promoting positive relationships
- Managing teacher stress
- Teaching Self-regulation
- Social & Emotional Coaching

Research Design. We used a blocked cluster random assignment design. Teachers were randomized within school, with the constraint that the number of intervention teachers be no more than one more or less than the number of control teachers. Teacher participants were recruited and randomized across three cohorts [year 1: 34 teachers (17 intervention), 577 students; year 2: 34 teachers (17 intervention), 571 students; year 3 37 teachers (19 intervention), 670 students].

Data Collection and Analysis. Student level data were collected pre and post intervention. Time 1 (T1) data were collected at baseline in the fall of the school year prior to intervention. Time 2 (T2) data were collected following intervention in the late spring of the school year.

In addition, teacher level implementation data were gathered at four time points across the academic year for both intervention and control classrooms. Time 1 occurred in October prior to teachers receiving IY TCM training or coaching. Time 2 occurred after teachers received workshop sessions 1 through 4 (24 hours of workshop training) and approximately 5 weeks of coaching. Time 3 occurred 2 weeks after the final workshop sessions (12 additional hours of training) and ongoing weekly coaching sessions. Time 4 occurred late spring following completion of all IY TCM workshop sessions and coaching.

Measures collected at each time point are discussed in more detail below. In addition, the measures are broken down into student measures and teacher measures.

Demographics. Demographic data on the individual students (e.g., race/ethnicity, free and reduced meals status, gender) were obtained from the school district. For the purposes of this study student race was coded as Black, White, or Other Race. Demographic data on the individual teachers (e.g., gender, ethnicity, years of experience teaching) were obtained through a brief self-report measure completed by all participating teachers.

Student Measures. The *Teacher Observation of Classroom Adaptation-Checklist* (TOCA-C; Koth, Bradshaw, & Leaf, 2009) is a 54-item measure of student behavior. It was completed by the classroom teachers for each student. The four subscales of the TOCA-C included in the present study were Disruptive Behaviors, Concentration, Prosocial Behavior, and Poor Emotional Regulation. The item responses ranged from 1 (*never*) to 6 (*almost always*). Previous research of the TOCA-C has found internal consistency estimates ranging from .86 to .96. For the current study, the internal consistency (computed using Cronbach's alpha) for each subscale ranged from .82 to .96.

The *Revised Social Competence Scale-Teacher version* (T-COMP; Gifford-Smith, 2000) is a 17-item measure, which assesses the teacher's perception of a student's prosocial behavior, emotional self-regulation, and academic competence. The total across all items provide an overall social competence score. The overall social competence scores are used in this study. The item responses range from 0 (*almost never*) to 4 (*almost always*). Previous research documented strong psychometric properties for the T-COMP (CPPRG, 1995; Gouley, Brotman, & Huang, 2008). Internal consistency for was .98 for the Total SCS (CPPRG, 1995). Additionally, good concurrent validity has been found between the T-COMP and four dimensions of the Social Skills Rating Scale (SSRS; Gresham & Elliot, 1990).

Teacher Implementation Measure. Independent observers conducted direct observations of teacher implementation using the *Multi-Option Observation System for Experimental Studies* (MOOSES; Tapp, 2004) interface for hand held computers to gather real time data using the *Brief Classroom Interaction Observation Revised* observation code (BCIO-R; Reinke & Newcomer, 2010). The frequency of teacher use of proactive classroom management strategies, including praise statements and precorrections, and reactive strategies (i.e., use of reprimands), were gathered simultaneously during each observation. Observations were conducted across the academic year at 4 time points. All observations occurred in classrooms during instructional times (i.e., reading and math). The rate of overall praise, precorrections, and reprimands were compiled for each observation period. Next, the rate of proactive classroom management strategies (praise and precorrection) were added together and divided by the total rate of observed practices (praise, precorrections, and reprimands) and multiplied by 100. Thus, the percentage of proactive classroom management strategies observed for each teacher across the four time points was utilized as an indicator of the quality of teacher implementation of classroom management practices. While there is no specific level of proactive classroom management considered to meet high standards of implementation, in general, teachers have been observed to use reactive strategies more often than proactive (Reinke, Herman, & Stormont, 2013). Higher proactive implementation is better with implementation above 50% indicating that teachers are using more proactive strategies than reactive.

Reliability checks were conducted for 30% of the observations. The mean percentage agreement across time-points on the BCIO-R was 91%, ranging from 81% to 95%. MOOSES utilizes second-by-second comparison of raters to determine reliability and an overall reliability of 80% is considered acceptable, thus 91% is considered highly reliable (Tapp, 2004).

Analytic Approach

For student outcome analyses, multiple imputation using a Markov chain Monte Carlo (MCMC) method in SAS PROC MI was used to impute missing data on pretest and other covariates (< 10% of sample). We imputed five times. For each of the five imputed datasets, three-level hierarchical linear models, in which students (level 1) are nested within teachers (level 2) and teachers are nested within schools (level 3), were conducted using SAS PROC MIXED to examine the treatment effects on disruptive behavior, prosocial behaviors, social competence, and emotional regulation for students. Student's pretest and demographic information were put at level 1, and the treatment variable was at level 2 and its coefficient was assumed constant across level 3. SAS PROC MIANALYZE was used to combine the results from the analyses of five datasets.

In addition, we conducted a two-way repeated measures ANCOVA to determine whether teachers' level of implementation of proactive management were significantly different over time for intervention versus control teachers.

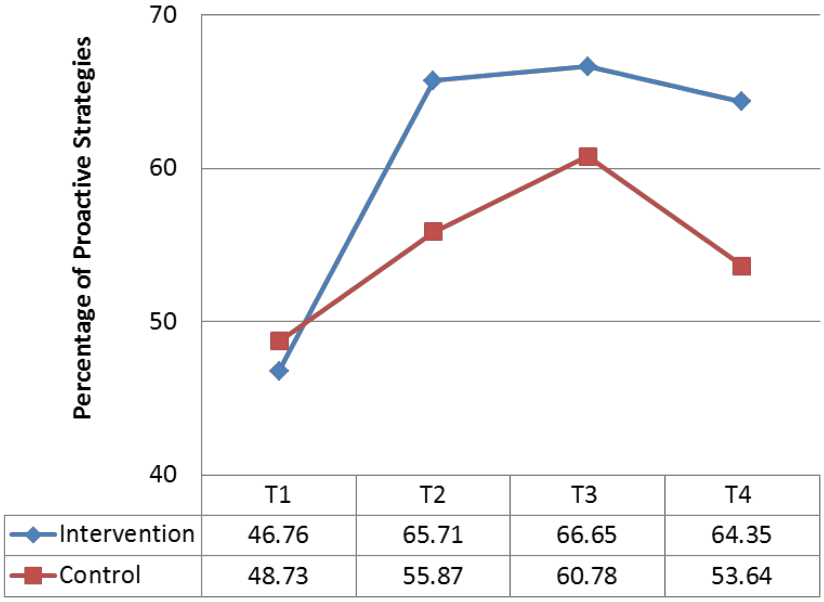
Findings / Results:

Baseline Equivalence. Pre-treatment covariates (pretest and child demographic information) between children enrolled in *IY TCM* and the control group were checked and had a good balance (the standardized mean differences were less than 0.10).

Student Main Effects. Main effect analyses demonstrated that students in *IY TCM* showed significant improvement in prosocial behavior ($b = 0.15$, $p < .05$, E.S. = .14), emotional regulation ($b = -0.16$, $p < .01$, E.S. = -.14), and social competence ($b = 0.14$, $p < .05$, E.S. = .13) compared to students in the control condition. However, there were no significant effects of *IY TCM* on disruptive behavior or concentration problems. The null findings on disruptive behaviors were likely an artifact of the low rates of disruptive behaviors across all classrooms at baseline (M=1.77 on a 1-6 scale, a full standard deviation below mean levels observed in other samples).

Teacher Implementation Findings. Results indicated that teachers in the intervention were more likely to implement higher levels of proactive classroom management strategies than control teachers over time; Wilks's $\lambda = .89$, $F(3, 97) = 4.22$, $p < .01$, $\eta^2 = .12$. See Figure 1.

Figure 1. Teacher Implementation of Proactive Strategies Over Time.



	T1	T2	T3	T4
Intervention	46.76	65.71	66.65	64.35
Control	48.73	55.87	60.78	53.64

Conclusions:

Our findings suggest that the IY TCM is an effective universal preventative intervention for fostering effective classroom management practices and for promoting student competence. Teachers assigned to the IY TCM condition were more likely to implement higher ratios of proactive teaching strategies over the course of an academic year compared to teachers in a wait-list control condition. Likewise, students in intervention classrooms had higher levels of social and emotional competence by the end of the year than students in control classrooms.

These findings have important implications for promoting effective environments in schools. Teachers often struggle with classroom management, with many citing behavior problems in schools as their primary stressor (Reinke et al., 2011). Ineffective classroom management can undermine student development including their academic, social, and emotional competence. IY TCM can help alter classroom environments to be more conducive to positive youth development. Continued implementation of this intervention with diverse groups of students and teachers will add to our understanding of its effects.

Appendix A. References

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