

SREE Symposium Overview

Title: Empirical and Theoretical Perspectives to Enhance Social-Emotional Learning: Evidence from Three Randomized Control Trials

Chair: Sophia H.J. Hwang

Paper Presenters: Sara Rimm-Kaufman, Patricia A. Jennings, Jennifer L. Frank, Sophia H. J. Hwang

Discussant: Elise Cappella

Symposium Justification:

In light of current social, economic, and political challenges, there is growing policy attention on advancing students' "21st Century Skills" through social-emotional learning (SEL) programs targeting students and their teachers (Schonert-Reichl et al., 2017). Indeed, a growing body of causal research across a range of schools highlights the promise of SEL programs to enhance child and early adolescent development (Brackett et al., 2012; Brown, et al., 2010; Durlak et al., 2011). Extant research demonstrates that students' participation in SEL programs and subsequent social-emotional competence are associated with academic achievement (Durlak et al., 2011), coping skills (Buckner et al., 2009), and well-being (Jones et al., 2015).

This symposium introduces a new conceptual framework on emotion processes in classrooms and presents evidence from three randomized control trials (RCTs) evaluating school-based SEL interventions. Using varied research designs, the empirical papers address not just student outcomes but also the development of social-emotional competencies in teachers. The papers span the developmental range (childhood through adolescence) and include diverse settings across the U.S. – emphasizing developmental and contextual considerations. Aligned with this year's conference theme, issues related to sustainability and generalizability are emphasized alongside the tensions and tradeoffs in school-based research.

The first paper presents results from an efficacy trial of a science project-based learning program in ethnically and socioeconomically diverse elementary schools. Teachers randomly assigned to intervention received professional development and coaching; positive intervention effects were detected for science achievement, civic engagement, and content-related attitudes and beliefs. Mediation and moderation analyses highlight the importance of implementation fidelity for the development of academic, social, emotional, and civic skills.

The second paper tests a large-scale mindfulness and awareness intervention for teachers in urban, low-income elementary schools. This longitudinal, cluster randomized trial demonstrates significant reductions in teacher-reported distress and physical aches and increases in emotion regulation. These outcomes persist through fall of the following school year; implications for sustainability and capacity-building will be discussed.

The third paper focuses on a randomized controlled trial of an intervention to enhance teacher communication and de-escalation skills in secondary schools. This paper uses Multiphase Optimization Strategy fractional factorial design to quantify the overall intervention impact and the unique effect of each treatment component (self-care, coaching, and virtual role play),

providing insights into core program effects. The intervention demonstrated positive effects on teacher effectiveness (engagement, instruction), student-reports of classroom engagement, and teacher compassion.

The fourth paper presents a theoretical framework, *Classroom Emotional Ecology*, which provides a new lens through which researchers and practitioners may view social-emotional learning interventions. This interdisciplinary, setting-level perspective highlights the emotional experiences within teacher-student and peer-peer interactions, and is informed by developmental, educational, and social network literatures.

The session culminates with a discussion led by a scholar with expertise in social-emotional learning and school-based intervention across ages and settings. Cross-cutting themes related to intervention implementation, feasible and appropriate measurement, and rigorous and relevant analysis will be addressed. Implications for future research addressing teacher and student well-being, the classroom learning environment, and school climate will be discussed.

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First Paper: Abstract Title Page

Title:

Results from an Early Efficacy Study of Connect Science, a Project-Based Learning Program Designed to Integrate Social and Academic Learning

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Results from an Early Efficacy Study of Connect Science, a Project-Based Learning Program Designed to Integrate Social and Academic Learning

Background: Few programs and practices integrate social and emotional learning with academic learning. However, teachers can leverage students' social and emotional skills in important ways. Consider the Next Generation Science Standards (2012) as an example. Students need social and emotional skills to meet these standards. For instance, the standard *Planning and Carrying Out Investigations* involves collaboration with other students which requires students to work with other people who are different than them or who may not necessarily be a close friend. The standard *Engaging in Argument from Evidence* requires students to disagree with someone else's ideas while also showing respect.

Connect Science is a fourth-grade, project-based learning professional development and curriculum that teaches science knowledge and social, emotional, and civic skills. The Connect Science lessons guide teachers and students to apply a positive classroom emotional ecology to the academic work of the classroom by preparing students to take action through an energy-related service-learning project.

Research Questions: Three research questions were addressed.

- (1) To what extent does Connect Science impact classroom practices? We hypothesized higher use of Connect Science practices in the intervention group compared to the business-as-usual (BAU) condition.
- (2) Do students receiving Connect Science show improved student outcomes compared to the control group? We expected students enrolled in Connect Science classrooms would show higher science achievement, civic engagement, energy attitudes and behaviors, communication and social competence compared to students in the BAU condition.
- (3) Does the relation between Connect Science and student outcomes stem from effective use of Connect Science? We hypothesized that use of Connect Science would mediate the relation between Connect Science and outcomes.

Setting: This randomized controlled trial was conducted in an ethnically and socioeconomically diverse schools in a large school district in the Upper South Central U.S during the 2017-2018 school year.

Participants: Fourth grade teachers were assigned randomly to intervention versus control conditions (41 classrooms [20 intervention] and 868 students [423 intervention]). All classrooms were from one district yielding students from diverse backgrounds (33% Caucasian, 35.9% African American, 25.7% Latinx, 5.4% other; 26.2% English Learners, 57.1% economically disadvantaged).

Intervention: Intervention group teachers received five days of professional development, two coaching sessions, and one reflection session. Teachers received 30 lessons, science materials, and trade books. Teachers implemented lessons over 15-20 weeks. Waitlist control teachers used local curricula to meet the same science standards.

Research Design: The work involved a randomized controlled trial. T-tests showed no differences between intervention and control groups on key student demographic and teacher attribute variables.

Data Collection and Analysis: District data produced demographic information for covariates including prior science scores and percentage economically disadvantaged. Teacher surveys were used to gather additional data on covariates (teacher education, teacher experience, departmental organization, percent EL students, and class size.) See Table 1. Teacher and student surveys were conducted upon completion of Connect Science (or at a comparable time in the control condition) to measure classroom practices and student outcomes.

Teachers reported on *Classroom Practices* to assess fidelity of implementation adapted from a Service-Learning Activity Report developed by KIDS Consortium and Center for Youth and Communities (2008). Intervention adherence was measured using a 12-item teacher-report measure ($\alpha = .92$). Items were designed to be applicable to teachers in the intervention and control conditions.

Student surveys were conducted to measure *science achievement, civic engagement, and energy attitudes and behaviors*. Students completed an assessment to measure science achievement using a 13-item, multiple choice assessment ($\alpha = .68$). Students reported on their civic skills and civic efficacy using an 8-item measure (Caswell, Billig, Goodson, Gan, Levin & Unlu, 2011; Center for Youth and Communities, 2011; $\alpha = .67$) and on their energy attitudes and behaviors using an 8-item scale (Bodzin, Fu, Peffer & Kulo, 2013; $\alpha = .65$).

Teachers reported on social skills for six students selected at random in their classroom. Teachers used a 7-item scale from the Social Skills Improvement System to assess communication (Gresham & Elliott, 2008) and a 6-item measure to assess social competence (Child Trends, 2014); ($\alpha = .92$ and $.96$, respectively).

Regression analyses were conducted at the classroom level. Variables collected at the student level were aggregated to the classroom level before inclusion in the models. All predictive models were estimated using Mplus Version 8. Coefficients were obtained using full information maximum likelihood estimation to account for missing data by using all available data for each case in estimating parameters to adjust for potential bias in the estimates resulting from missing data (Peugh & Enders, 2004).

Results: Analyses revealed main effects of Connect Science on classroom practices (RQ1), demonstrating differentiation between conditions ($\beta = .71$, $SE = .10$, $p < .001$). Further analyses demonstrated main effects of Connect Science on student outcomes (RQ2) including science achievement ($p < .001$), civic engagement ($p < .05$), and energy attitudes and beliefs ($p < .01$). There were no main effects of Connect Science on social skills (communication, social competence, $p > .05$). See Table 2.

Mediation analyses were conducted to examine the extent to which the relation between Connect Science and outcomes could be explained by use of Connect Science (RQ3). Findings showed full mediation for civic engagement and energy beliefs and actions, but not science achievement.

See Table 3. For exploratory purposes, interaction analyses were conducted using a median split in fidelity of implementation (RQ3) to examine the extent to which social skill boosts depended on fidelity of implementation. Connect Science related to higher communication and social competence in conditions of high implementation only. See Figure 1.

Conclusions: Findings demonstrate the usefulness of the Connect Science integrated model for boosting three out of five outcomes. Reliance on teacher-report outcomes for social skills remains a limitation because of potential reference bias and insensitivity to short-term changes (Duckworth & Yaeger, 2015). The discussion will address the advantages of Connect Science because of its holistic view of children's academic and social development. Further comments will focus on the challenge of inserting project-based learning like Connect Science into a typical school structure.

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Table 1.

Descriptive Statistics by Condition for Study Variables

	Mean (SD)		
	Control (<i>n</i> = 21)	Intervention (<i>n</i> = 20)	Combined (<i>N</i> = 41)
<u><i>Classroom Practices</i></u>			
Fidelity of Implementation	2.55 (.66)	3.50 (.43)	3.02 (.73)
<u><i>Student Outcomes</i></u>			
Science achievement	.71 (.10)	.79 (.08)	.75 (.10)
Civic engagement	3.20 (.16)	3.33 (.20)	3.27 (.19)
Energy attitudes and behaviors	3.72 (.18)	3.95 (.31)	3.83 (.27)
Communication	3.56 (.37)	3.61 (.26)	3.58 (.32)
Social competence	3.29 (.45)	3.27 (.41)	3.28 (.43)
<u><i>Covariates</i></u>			
Teacher has master's degree (1 = Yes)	.76 (.44)	.85 (.37)	.80 (.40)
Teacher years of teaching experience	9.38 (6.95)	10.35 (6.49)	9.85 (6.66)
Department structure (1 = Departmentalized)	.52 (.51)	.70 (.47)	.61 (.49)
% on track for 4 th grade science	24.13 (11.07)	22.59 (10.51)	23.38 (10.69)
% economically disadvantaged	52.35 (21.85)	46.47 (16.43)	49.48 (19.39)
% English language learners	13.20 (21.75)	31.27 (31.34)	22.01 (28.05)
Class size	20.47 (3.48)	20.15 (4.13)	20.29 (3.82)

Table 2.

Coefficients of Interest for the Effects of Intervention Condition on Outcomes

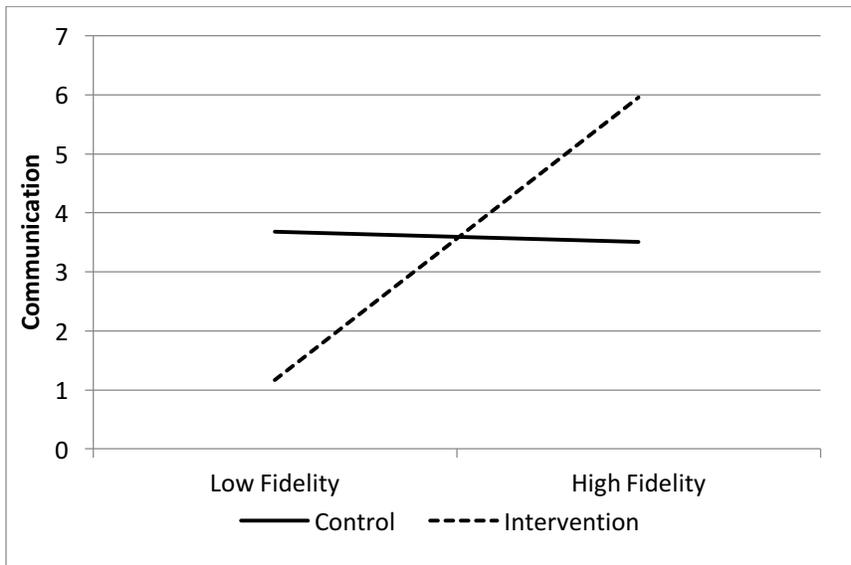
<i>Outcome</i>	β	$SE(\beta)$	p
<i>Classroom Practices</i>			
Fidelity of Implementation	.706	.104	< .001
<i>Student Outcomes</i>			
Science achievement	.428	.128	.001
Civic engagement	.215	.109	.05
Energy attitudes and behaviors	.302	.12	.01
Communication	.052	.16	.75
Social competence	-.069	.166	.68

Table 3.

Tests of the Indirect Effects of the Intervention on Student Outcomes through Classroom Practices (Fidelity of Implementation)

Indirect Effects	β	$SE(\beta)$	p
Treatment → Fidelity of Implementation → Science Achievement	.18	.134	.18
Treatment → Fidelity of Implementation → Civic Engagement	.252	.097	.009
Treatment → Fidelity of Implementation → Energy attitudes & behaviors	.228	.078	.003
Treatment → Fidelity of Implementation → Communication	-.032	.145	.82
Treatment → Fidelity of Implementation → Social Competence	-.029	.168	.86

a)



b)

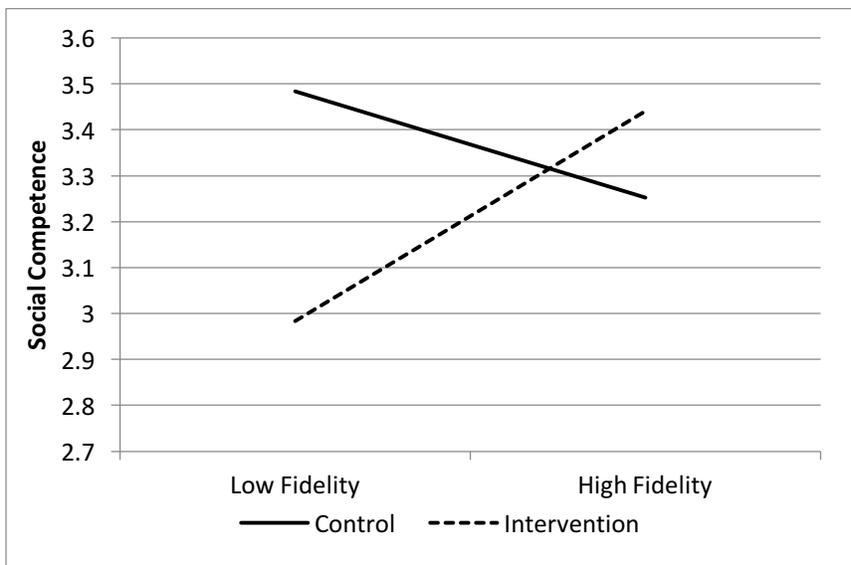


Figure 1. Relation between Connect Science and social skill outcomes in conditions of high and low use of Connect Science practices (fidelity of implementation). Figure 1a shows results for communication and Figure 1b shows findings for social competence.

Second Paper: Abstract Title Page

Title:

The Long-term Impacts of the CARE Program on Teachers' Well-being

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The Long-term Impacts of the CARE Program on Teachers' Well-being

Background: Teachers' social and emotional competence and well-being impact their ability to manage occupational stressors and cultivate and maintain quality learning environments (Jennings & Greenberg, 2009). CARE was evaluated with large-scale cluster randomized controlled trial (IES #R305A140692). Analyses showed that at the end of one school year (spring) CARE had significant direct positive effects on teachers' self-reported psychological distress ($p = .047$), time urgency ($p = .02$), mindfulness ($p = .007$), and adaptive emotion regulation ($p = .005$) controlling for baseline (fall) assessment (Jennings et al., 2017).

Research Aim: The purpose of the present study was to examine the impacts of CARE on changes in the same outcome domains over three time points from the fall of one school year to the fall of the following year (fall, spring, fall). We hypothesized that improvements in teacher outcomes found in the previous study over one school year would continue to show improvements when examined over a longer follow-up period that included assessment in the fall of a subsequent school year.

Setting: The study was conducted with 224 classroom teachers in 36 elementary schools in high poverty areas of New York City.

Participants: The majority of participants were female (93%) with a median age of 40 (*range*: 22-73). Participants were ethnically and racially diverse: 33% White, 31% Hispanic, 26% African American/Black, 5% Asian, and 5% mixed racial background.

CARE Intervention: The CARE program offers teachers a set of mindful awareness skills including breath awareness, mindful walking and stretching, listening and compassion practices, and activities to promote emotional awareness and emotion regulation. CARE program implementations were provided over five six-hour session days (30 hours total) between November and February. Almost all of the teachers (90%) attended at least four of the session days ($M = 4.49$). Teachers were offered a series of three one-on-one coaching phone calls during periods between sessions to support teachers' development of a personal practice and support their application of CARE skills and concepts to their teaching; the average call was 26 minutes.

Research Design: The data for this study were collected as part of a two-level (teachers/classrooms, schools) multi-site cluster randomized trial with intervention (CARE) at level two (teachers) and schools serving as naturally occurring blocks. Randomization of teachers to the CARE program or to the waitlist control group was conducted following baseline data collection. The data used in the present study have a hierarchical structure in which three repeated measures are nested within teachers (level 2), and teachers are nested within schools (level 3).

Data Collection and Analyses: Self-report data was collected from teachers using online surveys at three time points (fall, spring fall). We used three-level hierarchical linear growth models to examine the effects of CARE on changes in teachers' well-being and social-emotional competence over three assessment periods. The within-teacher (level 1) model specified repeated measures of each outcome as a linear function of time, with time centered at pretest and coded 0

for pre, 1 for post, and 2 for follow-up so the intercept represented the initial status of teachers at pretest while the slope represented teachers' rate of (linear) change. The between-teacher (level-2) model estimated between-teacher variation in change. The level-1 intercept and slope parameters were allowed to vary across teachers as a function of teacher-level predictors. At level 3, no school-level predictors were included, but initial status and change rate were allowed to vary randomly across schools to account for the nested structure of the data. Given the multi-site cluster randomized trial design with teachers as the unit of randomization, intervention status was included as a teacher-level characteristic. A cross-level interaction between time and intervention status assessed whether the rate of change in each outcome differed for teachers participating in CARE, compared with those in the control group. Poisson hierarchical generalized linear models were conducted to examine the impacts of CARE on three count-based indicators of teachers' physical health outcomes across the three assessment points.

Results: Table 1 presents the results from the three-level linear growth models for each of five outcome domains assessing teachers' well-being and social-emotional competence, and for the three teacher physical health-related indicators. The impacts of CARE were estimated for the intercept (i.e., initial status) and linear slope parameters (i.e., change rate). The estimated group differences in initial status and change rate are reported in the columns labeled 'Intervention' and 'Time×Intervention,' respectively. Significant or marginally significant time-by-intervention interactions were found for three of the five well-being and social competence domains, and one of the three physical health indicators. Specifically, teachers who received the CARE intervention reported significantly greater reductions across the three assessment periods in psychological distress ($\beta = -0.12, p < .01, ES = 0.16$) and greater improvements in mindfulness ($\beta = 0.05, p < .10, ES = 0.12$) and adaptive emotion regulation ($\beta = 0.18, p < .01, ES = 0.18$) compared to teachers in the control group. Teachers in the CARE intervention also showed significantly greater reductions in ache-related symptoms compared to control group teachers ($\beta = -0.20, p < .05, IRR = e^{(-0.20)} = 0.82$).

Conclusions: Findings indicate that even without additional intervention during the following school year, CARE teachers continued to report benefits from participating in a mindfulness-based intervention to support their well-being, social competence, and physical health.

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Table 1. CARE impacts on primary teacher outcome domains

	Intercept		Intervention		Time		Time × Intervention	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Mindfulness	3.61 ***	(0.04)	0.01	(0.05)	0.02	(0.02)	0.05 †	(0.03)
Psychological Distress	2.64 ***	(0.08)	-0.08	(0.09)	-0.12 **	(0.03)	-0.12 **	(0.04)
Time Urgency	3.34 ***	(0.05)	-0.13	(0.07)	-0.02	(0.02)	-0.01	(0.03)
Efficacy	7.17 ***	(0.10)	0.11	(0.12)	0.04	(0.06)	0.03	(0.07)
Adaptive Emotion Regulation	4.85 ***	(0.07)	0.04	(0.09)	-0.05	(0.05)	0.18 **	(0.05)
Ache-Related Symptoms	0.08 ***	(0.12)	0.09	(0.14)	-0.08	(0.09)	-0.20 *	(0.10)
Gastrointestinal Symptoms	-2.10 ***	(0.26)	-0.28	(0.32)	-0.25	(0.19)	-0.33	(0.23)
Sum of Medication	0.13	(0.11)	-0.14	(0.14)	-0.08	(0.07)	-0.07	(0.10)

Note: *** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$

Third Paper: Abstract Title Page

Title:

Development and Preliminary Evaluation of Project RESPECT on Student and Teacher Outcomes using a Multiphase Optimization Strategy (MOST) Development Framework

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Development and Preliminary Evaluation of Project RESPECT on Student and Teacher Outcomes using a Multiphase Optimization Strategy (MOST) development framework

Background: The development of effective interpersonal communication skills is critical to the success of professionals in a variety of settings. These skills are particularly important for teachers, who must learn to successfully interact with a diverse array of students, colleagues, and parents on a daily basis. Teachers with well-developed interpersonal communication skills are better prepared to provide emotional support by managing student behavior effectively, de-escalating conflict situations, and building more positive relationships with students, parents, and colleagues. Although the features of effective interpersonal communication strategies are fairly well-known, the field lacks feasible and effective programs to support the development of these skills among in-service teachers.

Research Aim: The aim of the present study was to develop and test the effectiveness of the Project RESPECT curriculum components using a Multiphase Optimization Strategy (MOST) development framework (Collins et al., 2011). MOST is a methodological framework for optimizing and evaluating multi-component behavioral interventions that typically begins with product development, followed by optimization of components through factorial experiments, and finally validation of product effectiveness through randomized trials (Collins et al., 2011; Collins, Dziak, & Li, 2009). At each stage of the MOST process, we (a) evaluate program effectiveness, and (b) evaluate program performance to determine fidelity and acceptability of the core curriculum in conjunction with additional intervention components: Self-Care Training, Virtual Role Play, and Teacher Coaching.

Setting: The study was conducted with 45 classroom teachers and 819 students in 4 secondary schools in Pennsylvania.

Participants: Approximately 57.9% of teacher participants were female, the majority were Caucasian (94%), with an average age of 39 ($SD = 9.76$). Most participants (84.2%) held a masters degree, and on average had 14.03 years ($SD = 7.83$) of experience teaching. A majority of teachers (78.9%) taught in regular education settings, 5.3% taught in special education, and 5.3% were specialist who taught art, foreign language, or music classes.

Project RESPECT Intervention: Project RESPECT is a professional development program to help teachers implement the principles of non-violent communication, learn strategies to prevent and de-escalate conflict, communicate effectively with difficult students and parents to build positive relationships and rapport, and increase opportunities for academic learning by instilling a "growth" mindset. The strategies learned in Project RESPECT are applicable to work with students, parents, colleagues, and life outside of work. The professional development is designed to be interactive with ample time for discussion and practice. Project RESPECT is unique among other social-emotional learning programs in its focus on modifying maladaptive patterns of student-teacher communication.

Research Design: The research study uses a MOST fractional factorial design. All teachers attend a face-to-face 2 day professional development workshop delivered by program developers. Subsequently, teachers were assigned to conditions that include a planned mixture of

exposures to self-care, coaching, or virtual role play components. We used effect coding to determine the overall impact of the program curriculum and main effect for each program component. Effect-code interactions were used to explore the relative benefit of various combinations of program components on teacher and student outcomes. The self-care component was designed to be administered as a self-paced online program focusing on various dimensions of teacher intra and interpersonal well-being. After completing self-care personal assessments and readiness-to-change evaluations, participants exposed to this component completed modules focused on strategies for enhancing physical and psychological dimensions of self-care, supporting creativity and self-expression, and expressing gratitude, and developing a self-care action plan. The Virtual Role Play component consisted of teacher practice in engaging in conversations with artificially intelligent ‘chat-bots’ which mimicked real-life student encounters. Teachers exposed to this condition progressed through a series of virtual role play modules where they were exposed to a given real-life scenario, and asked to apply the conversational techniques used during the intervention training to the simulated exchange. Teachers exposed to the coaching component received 2 hours of one-on-one coaching delivered by the program developers. The coaching protocol was data driven, and focused on problem solving in relation to student-feedback data and applying strategies in the classroom.

Data Collection and Analyses: Teacher and student self-report measures were collected approximately 2 weeks prior to the start of the intervention and after completion of the intervention. In addition, 2 classroom video-based observations were conducted before and after the intervention using the Classroom Assessment Scoring System (CLASS), Behavioral Observation of Students in Schools (BOSS), and the Assessing School Settings: Interactions of Students and Teachers (ASSIST) coding system. Observational data were coded by independent coders blind to study condition. After data collection was completed, all teacher participants participated in a 60-minute semi-structured interview.

Results: Analyses of outcome data are ongoing. Preliminary results suggested an overall direct intervention effect on teacher effectiveness related to student engagement and instruction ($B = 0.34, p = 0.01$), and small effects bordering on significant observational measures of emotional support ($B = 0.22, p = 0.06$), and student engaged time ($B = 0.19, p = 0.07$). Student self-report of classroom engagement and teacher compassion also showed significant improvements from pre to post ($p < 0.05$). Also several direct effects were found, MOST analyses of intervention component interactions did not yield a specific combinational pattern resulting in superior outcomes.

Conclusions: Our preliminary results suggest that targeting maladaptive communication patterns in the classroom can be an important, though frequently overlooked, target for improving the social-emotional context of student learning. Our preliminary results illustrate how MOST designs can be utilized by investigators in the early intervention development stage to identify effective intervention components and use data to guide development decisions.

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Fourth Paper: Abstract Title Page

Title:

Classroom Emotional Ecology: A Networked, Social Emotional Learning Perspective

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Background: In the United States, school is often considered the “de facto mental health system” (Atkins et al., 2010; Jacob & Coustasse, 2008) providing students with emotional and behavioral support in addition to academic instruction (Fredricks et al., 2004; Suárez-Orozco et al., 2009). It is understood that the teacher is the instructional leader of the classroom; however, a growing body of causal research highlights the teacher’s ability to support students’ emotional development (e.g., Brackett et al., 2012; Brown et al., 2010). Especially in schools that lack adequate support personnel (Atkins et al., 2017), teachers become the first line of defense for students with emotional challenges (Graham et al., 2011). As a result, districts increasingly turn to teachers to implement social-emotional learning (SEL) curricula (Jones & Bouffard, 2012). In addition to teachers, a strong literature focuses on the role of students and their peers contributing to the classroom environment (Cappella & Hwang, 2015; Gest et al., 2011).

A rich body of extant empirical work affirms the relations among students’ academic, social, and behavioral outcomes, and the influence of teachers and peers on these outcomes. However, *emotional* outcomes and the inter-individual processes and relationships in the classroom remain understudied, particularly during the critical periods of developmental and school transition in early adolescence. Scholars argue that emotional processes are the foundation for a productive classroom (Jennings & Greenberg, 2009), but no comprehensive framework exists to capture this in action. This paper aims to address this gap.

Objective: Drawing upon prior theoretical and empirical research in developmental and education science, we propose a new perspective for conceptualizing emotional experiences in the classroom. *Classroom emotional ecology*, informed by networked (Neal & Neal, 2013) ecological systems theory (Bronfenbrenner, 1977; 1979), is a setting-level, interdisciplinary framework focused on how classroom interactions reciprocally influence the emotional processes of students and teachers. In this paper, we present a model of classroom emotional ecology that illuminates the classroom as a space where emotional content, communicated via peer-peer and teacher-student interactions, is salient, malleable, and meaningful. We propose ways that this framework can inform next steps in SEL research and intervention.

Population / Setting: Early adolescence is a critical period of academic, biological, and developmental transition when youth experience increasingly complex emotions (Steinberg, 2008). These normative challenges are compounded for racial/ethnic minority students in under-resourced communities, as poverty and its correlates can intensify emotional experiences during this time (Farahnaz et al., 2011) and students face increased risk for emotional and behavioral difficulties (Gregory et al., 2010). Schools serving low-income and minority youth, and classrooms within schools, are an influential developmental setting for young people (Hamre & Pianta, 2007), in which both teachers *and* peers facilitate students’ social, emotional, and academic experiences (Farmer et al., 2011; Jennings & DiPrete, 2010). Thus it is critical to examine classrooms as a context for adolescents experiencing emotional content.

Theoretical Model: Classroom emotional ecology is a setting-level perspective that views the classroom as comprising three emotion-relevant components: (a) the emotional experiences of the individual teacher(s) and students, (b) the dynamic interactions among dyads and subgroups

within the classroom, and (c) the overall level of support, safety, and responsivity across the classroom. This framework is guided by theory and empirical literature focused on teaching practices, peer ecologies, and social-emotional learning.

Most SEL programs focus on students' outcomes in relevant emotional (and social) domains (Arghode, 2013; Gabowitz, Zucker, & Cook, 2008), with only a handful of programs (e.g., RULER; Maurer & Brackett, 2004), emphasizing emotional competency for *both* the student and teacher. Few SEL interventions explicitly focus on peer ecologies as contexts that influence – and are influenced by – emotional (and social) competence. Similarly, the measurement of classroom social-emotional interactions focuses on the individual experience or dyadic interactions between teachers and students, rather than group-level interactions among peers. For example, the Student-Teacher Relationship Scale (Pianta, 2001) involves the teacher's report on closeness and conflict with a student; the Tripod survey (Ferguson, 2008) assesses the student's perception of the teacher's level of care. The Classroom Assessment Scoring System (CLASS – Secondary; Pianta, Hamre, & Mintz, 2010), an observational tool assessing classroom quality, provides a framework to understand how a teacher addresses social-emotional needs. However, peer interactions that contribute to or detract from the classroom's goal of creating a supportive learning environment, are not fully captured in these tools.

Given that research examining SEL interventions and measurement has largely ignored peer interactions, there is an opportunity to apply social network theory to capture the importance of peer dynamics in the classroom emotional environment. One concept from the network literature is peer ecology, which includes the social structure (ties, connections), social status (hierarchy, popularity), and social norms across peer groups and settings (Gest & Rodkin, 2011). Recently, Neal and Neal (2013), incorporated key tenets from social network theory into ecological systems theory (Bronfenbrenner, 1977; 1979) to challenge the traditional notion of the individual being “nested” in concentric systems and posit that these systems are instead “networked.” This networked model of ecological systems theory (Neal & Neal, 2013) can be applied to classrooms to examine the emotional environment. Classroom emotional ecology (Figure 1) allows practitioners and scholars to think about the relational and structural nature of emotional processes as: (1) the teacher (focal individual; ‘T’ in Figure 1) interacts with individual students (dyad; tie from “T” to each node); (2) the teacher interacts with groups of students (microsystem; blue dotted lines) which may include “cliques” such as high achieving students, popular students, and English Language Learners; and (3) students in different groups interact across groups (mesosystemic interaction; purple line). The heterogeneity of interactions, diversity of microsystems, and the emotional valence between the teacher and various peer groups taken together composes the classroom emotional ecology.

Conclusion: Integrating notions of teacher practice, emotional support, and peer ecology, classroom emotional ecology provides a holistic and realistic perspective of classroom emotional processes. Future directions regarding how this framework may guide next steps in measurement and inform intervention to promote emotional development in early adolescent classrooms will be discussed.

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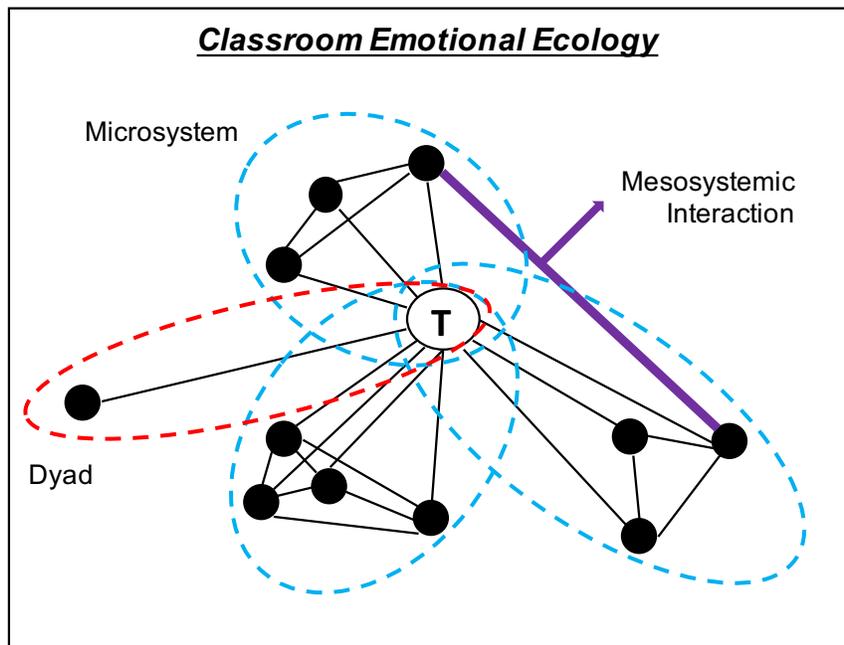


Figure 1. Conceptual model of classroom emotional ecology.