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Title: MyTeachingPartner: A Professional Development Intervention for Teacher Self-Efficacy

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Abstract Body

Limit 4 pages single-spaced.

Background / Context:

Teacher self-efficacy is a teacher's belief in his or her ability to complete the steps required to accomplish a particular teaching task in a given context (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998), or more broadly as a teacher's belief in their ability to influence important student outcomes (Wheatley, 2005). Numerous studies have established the positive relation of teacher self-efficacy with important educational outcomes such as teacher retention in the workforce (Knobloch & Whittington, 2002; Hoy & Spero, 2005; Yost, 2006), classroom instructional quality (Justice et al., 2008) and student's academic performance (Bandura, 1993; Goddard, Hoy, & Woolfolk, 2000; Guo, Piasta, Justice, & Kaderavek; 2010). However, little research has been conducted to determine if professional development programs for in-service teachers can use support strategies to increase teacher self-efficacy.

Bandura (1993) postulated four sources of information which contribute to teacher self-efficacy, including mastery experiences, physiological and emotional cues, vicarious experiences, and verbal feedback. If one believes that one has completed a task successfully, a sense of mastery develops, self-efficacy is increased, and a precedent is established from which future expectations of success can be drawn. Physiological and emotional cues, such as feelings of excitement or anxiety can contribute to a feeling of mastery or ineptness. (Bandura, 1993; Tschannen-Moran et al., 1998). Vicarious experiences are those through which a person can watch a similar other model desired behaviors, and based on another's positive experience, expect personal success (Bandura, 1977; Tschannen-Moran et al., 1998). Verbal persuasion, such as encouragement or praise, can help create an expectation of future success, based on feedback from a trusted source (Bandura, 1986; Tschannen-Moran et al., 1998). Based on this conception of self-efficacy, it might be possible to focus on these four sources as targets of a professional development intervention by which to enhance teacher self-efficacy.

MyTeachingPartner (MTP) is an interactive, web-based professional development format created at the Center for Advanced Studies in Teaching and Learning (CASTL) at the University of Virginia (Hadden & Pianta, 2006). The MTP model is based on the understanding that effective teacher professional development requires opportunities for teachers to watch high quality teaching and receive regular feedback on their own teaching practice (Pianta, Mashburn, et al., 2008). The MTP model includes many of the above identified sources of self-efficacy, and its components map on to Bandura's sources of self-efficacy. For example, the consultancy allows teachers to practice teaching in a supportive environment, moving them to greater levels of mastery. They collaboratively evaluate their teaching practice with the feedback from a qualified consultant, and gain a greater sense of control over their own outcomes, therefore reducing negative arousal, and increasing positive emotional cues. The video exemplars of high quality teaching, to which consultants often refer teachers, can serve as efficacy-enhancing vicarious experiences.

In the context of an intervention study aimed at improving teacher-child interactions through the use of the MTP consultancy, we positioned the present study as an attempt to test the efficacy of MTP as a professional development approach for targeting teacher self-efficacy. Specifically, this study examines the extent to which treatment assignment relates to teacher self-efficacy in the domains of classroom management, student engagement, and instructional strategies.

Purpose / Objective / Research Question / Focus of Study:

Our analyses correspond to two central research questions.

(1) To what extent can the MTP serve as a professional development intervention to increase preschool teachers' sense of self-efficacy? We hypothesize based on the advantageous components of the MTP consultancy, that teachers in the treatment condition will have higher levels of teacher self-efficacy after controlling for pre-intervention levels than those in the control group.

(2) Is this effect greater for teachers who have not had a formal mentor in the previous school year? We also hypothesize that teachers who had a formal mentor the previous year may not benefit as much from the MTP consultancy because they might already be benefitting from self-efficacy enhancing supports.

Setting:

During the course of this study, the MTP consultancy was offered in nine sites across the country, including: New York City; Hartford, Connecticut; Chicago, Illinois; Stockton, California; Dayton, Ohio; Columbus, Ohio; Memphis, Tennessee; Charlotte, North Carolina; and Providence, Rhode Island. Participating teachers worked in a variety of early childhood programs including Head Start, preschool, and child care.

Population / Participants / Subjects:

Three hundred thirty-five teachers participated in the study, with 173 participating in the consultancy and 162 serving as the control group. Teachers were diverse in their educational attainment, experience, and in their racial/ethnic background (see Table 1 for descriptive statistics).

Intervention / Program / Practice:

During the consultancy teachers were assigned to work with a consultant. The consultancy focused on: a) establishing a non-judgmental and non-evaluative support relationship between the teacher and the consultant; b) observing the video footage and identifying a teacher's behaviors with students and their effects; and, c) problem-solving to identify and implement alternative approaches as needed and receiving feedback on such attempts. Every two weeks over the school year, teachers videotaped their implementation of an activity and mailed the tape to the consultant. The consultant reviewed and edited the video into a 1-2 minute segment(s) and provided feedback and questions/prompts that focused on a specific aspect of teacher-child interactions. Those edited video segments and specific written feedback were then posted on a private website for the teachers' viewing and response. Once the teacher responded, the teacher and consultant had a video-conference and decided on an action plan for the next cycle of consultation. This action plan highlighted particular dimensions of focus in the coming weeks and included suggestions of specifically aligned video exemplars of high quality interactions which the teacher would watch to support her growth in the teaching dimension of interest. Following the conference, the consultant wrote a summary of the conference, including the action plan, and sent it to the teacher in preparation of the next cycle.

Research Design:

The study employed a randomized control trial methodology. Teachers within each site were randomly assigned to receive the consultancy or to be in a business as usual control group. The final sample includes 173 consultancy teachers and 162 in the control group.

Data Collection and Analysis:

This presentation focuses on data that were collected through teacher report (pre- and post-consultancy) and demographic questionnaires that were completed at the start of the study. The self-efficacy measure used is described below:

Teacher's Sense of Self Efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). This 12-item scale assesses teachers' judgment of capabilities to bring about desired outcomes of student engagement and learning, even among students who may be difficult or unmotivated. This measure contains three subscales: (1) efficacy for instructional strategies (e.g., To what extent can you use a variety of assessment strategies?), (2) efficacy for classroom management (e.g., how much can you do to control disruptive behavior in the classroom?), and (3) efficacy for student engagement (e.g., how much can you do to help your students value learning?). Items are rated on a response scale from 1 (nothing) to 9 (a great deal). Internal consistencies for these subscales ranged from .81 and .86 in a sample of 366 pre-service and in-service teachers (Tschannen-Moran & Woolfolk Hoy, 2001). For the present study, internal consistencies ranged 0.81 to 0.84. Pre- and post-intervention descriptive statistics for the three subscales of this measure can be found in table 2.

Analyses presented below were conducted using linear regressions in which each post-intervention teacher self-efficacy subscale was predicted based on group membership (consultancy vs. control), controlling for all three pre-intervention self-efficacy subscales. In addition, since a large proportion (41% of consultancy and 40% of control) of the teachers had taken part in a professional development course on effective teacher-child interactions which might have provided a boost to self-efficacy ***before*** randomization to consultancy and control, we controlled for this course condition in our analyses. We also included whether teachers were involved in formal mentorship the year before, and tested the interaction between treatment condition and previous mentorship to address out interaction question. In future analyses, when the data are available, we will test the effects of teacher's participation in each of the individual components of the consultancy which we hypothesized mapped onto Bandura's sources of self-efficacy (i.e. time spent on the video library, number of cycles in which feedback was provide, and levels of negative emotions) to see if a larger dosage of each component predicted larger self-efficacy gains within the intervention group.

Findings / Results:

Results below were obtained based on analyses with treatment condition and previous year's mentorship status as predictors of post-intervention self-efficacy.

Consistent with our hypothesis, teachers who participated in the consultancy reported higher levels of self-efficacy of instructional strategies than control teachers, even after controlling for pre-intervention levels ($\beta = 0.17$, $p = .007$). Contrary to our hypotheses, these effects did not extend to self-efficacy in the areas of student engagement or classroom management. The effect size for self-efficacy of instructional strategies was in the small range (Cohen's $d = .22$).

Also contrary to our hypothesis, having a mentor the previous year did not significantly predict greater self-efficacy at the end of the intervention, nor did it serve as a significant moderator of intervention effects. Final regression results are reported in Table 3.

Conclusions:

The goal of this study was to determine the effect of the MTP professional development consultation model on teacher-self efficacy, and if this effect was impacted in any way by whether a teacher had been involved in some form of formal mentorship the prior academic year. Self-efficacy is enhanced through four postulated sources of information (Bandura, 1993): mastery experiences, physiological and emotional cues, verbal persuasion, and vicarious experiences. Since several components in the MTP consultancy have the potential of serving as proxies for these four sources, we hypothesized that teachers in the treatment group, who were involved in the MTP consultancy over the course of one academic year, would show larger teacher self-efficacy gains. We further hypothesized that teachers who had not been involved in formal mentorship the year before would also show greater teacher self-efficacy gains because the intervention would have the potential of making greater changes in environments that were previously less supportive.

Our statistically significant results for self-efficacy of instructional strategies suggest that our intervention was successful, and the MTP consultancy was indeed effective in increasing some aspects of teacher self-efficacy. We controlled for teacher self-efficacy scores which were reported before the start of the intervention, increasing the precision of our estimates, and participants in the MTP treatment condition still showed greater gains in teacher self-efficacy at the end of the study. Even though our effect size for the treatment was modest, it is still surprising when considering the post-hoc nature of this study. We selected our sample from an on-going study with a completely separate purpose, and self-efficacy was not the intended target of the MTP consultancy being used in the project. Further study is needed to examine the possibility that creating consultation modules specifically focused on helping teachers have more self-efficacy enhancing experiences can lead to more robust effect sizes.

The results of our study indicate that having had a mentor the previous year did not play a significant role in teacher self-efficacy gains during the study period, whether as a main effect, or as a moderator of MTP consultancy effects. There could be several explanations for this lack of effects. It is possible that as our measure of support in the teacher's professional environment, this particular variable was too distal (from the previous academic year) and too vague. Having a mentor is only supportive in ways that enhance self-efficacy if the mentor is engaged and doing their job. On the other hand, there are many other ways in which teachers can be receiving support which enhances self-efficacy, such as regular positive feedback from a principal, which are not being captured here, and could be adding noise to our analysis. More study is needed to better understand how already existing support structures moderate the effect of the MTP consultancy on teacher self-efficacy, and if these other support formats are themselves effective avenues for intervention in this area.

Appendices

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Appendix A. References

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Appendix B. Tables and Figures

Table 1. Teacher Demographics

	Consultancy			*Control*	
	%	*n*		%	*n*
Female	93%	*161*		95%	*154*
Ethnicity					
African American	45%	*78*		49%	*79*
Asian	3%	*5*		5%	*8*
Caucasian	32%	*55*		28%	*46*
Latino	15%	*26*		12%	*19*
Other	4%	*7*		4%	*6*
Highest Education					
AA or less	41%	*70*		31%	*49*
BA	37%	*63*		54%	*86*
More than BA	29%	*37*		15%	*24*
Years of Experience					
10 or more years	61%	*106*		64%	*103*
Head Start Teacher	46%	*79*		49%	*80*
In Public School Building	34%	*58*		32%	*51*

Table 2. Descriptive Statistics

	Consultancy			*Control*	
	M	*SD*		*M*	*SD*
Pre-Intervention Self-Efficacy					
Student Engagement	7.78	0.99		7.86	0.89
Instructional Strategies	7.33	1.08		7.56	0.98
Classroom Management	7.35	1.10		7.49	0.99
Post-Intervention Self-Efficacy					
Student Engagement	8.07	0.93		7.93	1.04
Instructional Strategies	7.82	0.93		7.59	1.12
Classroom Management	7.82	1.09		7.66	1.19
	%	*n*		%	*n*
Mentor Past Year	53%	*91*		46%	*75*

Table 3. Linear Regression Models Predicting Teacher Self-Efficacy (TSE)

	TSE of Student Engagement (post)		TSE of Instructional Strategies (post)		TSE of Classroom Management (post)	
	β	(SE)	β	(SE)	β	(SE)
Covariates						
Course	-0.04	0.06	-0.09	0.05	0.01	0.06
TSE of Student Engagement (pre)	0.30***	0.08	0.05	0.08	-0.01	0.08
TSE of Instructional Strategies (pre)	0.12	0.09	0.35***	0.08	0.05	0.09
TSE of Classroom Management (pre)	0.10	0.08	0.17*	0.08	0.42***	0.08
Predictors						
Consultancy	0.08	0.06	0.14**	0.05	0.10	0.06
Mentor Past Year	0.01	0.06	0.10	0.05	0.06	0.06

*$p < .05$. **$p < .01$. *** $p < .001$.