Abstract Title Page
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Title: Mindfulness promotes educators' efficacy in the classroom.

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Abstract Body
Limit 4 pages single-spaced.

Background / Context:
Description of prior research and its intellectual context.

Teachers are responsible for delivering academic instruction, facilitating student learning and engagement, and managing classroom behavior. Stress may interfere with performance in the classroom, however (Tsouloupas, Carson, Matthews, Grawitch, & Barber, 2010), and recent studies suggest that stress is quite common among today's educators. In the U.S., about 51% of educators report experiencing excessive stress several days per week (MetLife, 2013), and nearly 40% leave the profession within their first five years of teaching (Ingersoll, 2002). In light of these trends and their potential for negatively impacting students' learning, it is critical to identify factors that support educators' health, wellbeing, and effectiveness.

The Prosocial Classroom Model (Jennings & Greenberg, 2009) suggests that mindfulness and other aspects of social-emotional competence may lead to more effective classroom management and protect educators from experiencing a "burnout cascade" of deteriorating classroom climate, student misbehavior, and emotional exhaustion. Mindfulness has been defined as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (Kabat-Zinn, 1994, p. 4), and mindfulness training for adults has been linked with reductions in stress and improvements in wellbeing (Ospina et al., 2007). Emerging evidence from intervention studies suggests that mindfulness training is associated with improvements in teachers' classroom behavior (e.g., Flook, Goldberg, Pinger, Bonus, & Davidson, 2013; Jennings, Frank, Snowberg, Coccia, & Greenberg, 2013). In the current study, we examined how educators' mindfulness at the beginning of the school year predicted change in educators' self-reported efficacy with respect to student engagement, classroom management, and instructional practices from fall to spring of the school year.

Purpose / Objective / Research Question / Focus of Study:
Description of the focus of the research.

The present study (Aim 1) examines the impact of mindfulness on change in educators' efficacy in the classroom across an academic year, and (Aim 2) explores potential mediators and moderators of these associations. Analyses related to Aim 2 are ongoing.

Setting:
Description of the research location.

This study was conducted in a middle school setting in central Pennsylvania.

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

Participants were 30 educators (83% female) from a middle school in Pennsylvania who were in the wait-list control condition of a broader study that involved the evaluation of a mindfulness-based intervention for teachers and school staff. Approximately 57% of participants were

classroom teachers, and 43% were other school staff (e.g., paraprofessionals, learning support staff, counselors). On average, participants were about 45 years old ($M = 44.70$, $SD = 12.50$) and had 14 years of experience in education ($M = 14.24$, $SD = 9.09$). The sample was predominantly Caucasian.

Intervention / Program / Practice:
Description of the intervention, program, or practice, including details of administration and duration.

The data used were from a broader study that evaluated the efficacy of CALM, a new yoga-based intervention that is delivered in 20-minute sessions, 4 days per week, over 16 weeks in the school setting. However, the current study is descriptive and does not involve the evaluation of an intervention.

Research Design:
Description of the research design.

The data used in the current study were drawn from a broader pilot study that employed a longitudinal quasi-experimental design. Two middle schools were recruited to participate in a study on educator health and wellbeing, which included the evaluation of a yoga-based professional development program for educators. One school was assigned to receive the program during the 2012-2013 academic year (intervention condition), and one school was assigned to receive the program during the 2013-2014 academic year (wait-list control condition). The current longitudinal study used data from participants in the wait-list control condition from the Fall 2012 assessment and the Spring 2013 assessment, before any intervention activities occurred in the wait-list control school.

Data Collection and Analysis:
Description of the methods for collecting and analyzing data.

Data were collected at three time points: (1) Fall 2012, (2) Spring 2013, and (3) Fall 2013 (ongoing). Each assessment period included (1) an online self-report survey on educators' attitudes, feelings, and behaviors, (2) an in-person assessment during which measures of body-mass index and blood pressure were obtained, and (3) a saliva collection from which cortisol, salivary alpha amylase, C-reactive protein, and DHEA-S were assayed. The current study used data from the self-report measures collected during the Fall 2012 and Spring 2013 assessments.

Efficacy was measured with the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001), which included student engagement, classroom management, and instructional practices subscales.

Mindfulness was measured with the Interpersonal Mindfulness in Teaching Scale (IMTS; Greenberg, Jennings, & Goodman, 2010) and with the Five-Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). The IMTS included present-centered awareness and interpersonal mindfulness subscales, and the FFMQ included observing, describing, acting with awareness, non-judging, and non-reacting subscales.

Potential mediators and moderators of the association between mindfulness and efficacy include

affect and burnout. These constructs were measured with the Positive and Negative Affect Schedule – Short Form (Thompson, 2007) and the Maslach Burnout Inventory (Maslach, Jackson, & Leiter, 1997).

All regression analyses predicted an aspect of efficacy in the spring, controlling for prior efficacy in the fall. Mindfulness measures were treated as independent variables (in separate models for each mindfulness measure) and gender and years of experience were treated as additional covariates.

Findings / Results:
Description of the main findings with specific details.

Descriptive statistics and correlations among the study variables are presented in Table 1. All three aspects of efficacy were moderately to highly stable from fall to spring of the school year (*r*s .49 to .77).

Results of analyses related to Aim 1 are presented in Table 2. Several mindfulness subscales were predictive of change in efficacy from fall to spring of the school year. Mindfulness measures were the strongest and most consistent predictors of efficacy in the domain of student engagement; that is, all measures significantly or marginally significantly predicted change in student engagement efficacy. Change in classroom management efficacy was significantly or marginally significantly predicted by both subscales of the IMTS and the Observing and Acting with Awareness subscales of the FFMQ. Change in instructional practices efficacy was significantly or marginally significantly predicted by the Present-Centered Awareness subscale of the IMTS and the Acting with Awareness and Non-judging subscales of the FFMQ. The IMTS Present-Centered Awareness subscale and the FFMQ Acting with Awareness subscale were significant or marginally significant predictors of all three aspects of efficacy, which suggests that awareness may be a particularly powerful component of mindfulness with respect to efficacy in the classroom.

Results of analyses related to Aim 2 are ongoing. Preliminary analyses suggest that changes in positive affect might partially account for the effect of mindfulness on change in efficacy, particularly efficacy related to classroom management, and that the effects of mindfulness are not moderated by affect or burnout.

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

Previous studies have documented links between mindfulness and indicators of health and wellbeing, but little research to date has explored the impact of mindfulness on educators' efficacy in the classroom. The current study provides evidence that several components of mindfulness predict change over the course of the school year in efficacy related to student engagement, classroom management, and instructional practices. These results will aid in strengthening conceptual models of the role that mindfulness plays as a part of educators' social-emotional competence. Ongoing analyses with these data explore potential mediators and moderators of these associations.

Although this study was non-experimental, therefore limiting the strength of conclusions, the longitudinal design did allow us to examine change over time rather than simply concurrent correlations. These data were drawn from a broader study that includes the evaluation of a yoga-based intervention, however, and future work will include treatment mediation analyses that may bring us closer to making causal inferences about these constructs. Another limitation of the current study is its reliance on self-report measures of mindfulness and efficacy. There is debate in the field regarding the best way to measure mindfulness (Baer, 2011), but self-report measures are the most commonly used in the literature. To reduce bias due to shared method variance, future studies should utilize observational methods to assess efficacy in the classroom (e.g., the CLASS, Pianta, La Paro, & Hamre, 2006).

Despite these limitations, the current study contributes to a growing body of work that highlights the benefits of mindfulness for educators. The current work tested and demonstrated some support for a hypothesis of the Prosocial Classroom Model that suggests that mindfulness is one aspect of social-emotional competence that predicts effective classroom performance. The clarification of conceptual models is essential to building a strong understanding of supports for educator efficacy and professional development. This type of work will aid in the continued development of theoretically sound and efficacious interventions to promote outcomes among educators, classrooms, and students.

Appendices
Not included in page count.

Appendix A. References
References are to be in APA version 6 format.

Baer, R. A. (2011). Measuring mindfulness. *Contemporary Buddhism*, *12*, 241-261.

Baer, R.A., Smith, G.T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, *13*, 27-45.

Flook, L., Goldberg, S.B., Pinger, L., Bonus, K., & Davidson, R.J. (2013). Mindfulness for teachers: A pilot study to assess effects on stress, burnout, and teaching efficacy. *Mind, Brain, and Education*, *7*, 182-195.

Greenberg, M.T., Jennings, P.A., & Goodman, B. (2010). The Interpersonal Mindfulness in Teaching Scale. University Park, PA: Pennsylvania State University.

Ingersoll, R.M. (2002). The teacher shortage: A case of wrong diagnosis and wrong prescription. *National Association of Secondary School Principals Bulletin*, *86*, 16-31.

Jennings, P.A., Frank, J.L., Snowberg, K.E., Coccia, M.A., & Greenberg, M.T. (2013). Improving classroom learning environments by Cultivating Awareness and Resilience in Education (CARE): Results of a randomized controlled trial. *School Psychology Quarterly*. Advance online publication.

Jennings, P.A., & Greenberg, M.T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to child and classroom outcomes. *Review of Educational Research*, *79*, 491-525.

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life*. New York: Hyperion.

Maslach, C., Jackson, S.E., & Leiter, M.P. (1997). Maslach Burnout Inventory. In C.P. Zalaquett & R.J. Wood (Eds.), *Evaluating stress: A book of resources* (pp. 191-218). Lanham, MD: Scarecrow Education.

MetLife. (2013). *The MetLife Survey of the American Teacher: Challenges for school leadership*. New York, NY: Metropolitan Life Insurance Company.

Ospina, M.B., Bond, K., Karkhaneh, M., Tjosvold, L., Vandermeer, B., Liang, Y., et al. (2007). Meditation practices for health: the state of the research. *Evidence Report/Technology Assessment, 155*, 1-263.

Pianta, R. C., La Paro, K. M., & Hamre, B. K. (2006). The Classroom Assessment Scoring System (CLASS). Brookes Publishing.

Simons, J.S. & Gaher, R.M. (2005). The Distress Tolerance Scale: Development and validation of a self-report measure. *Motivation and Emotion*, *29*, 83-102.

Thompson, E.R. (2007). Development and validation of an internationally reliable short-form of the Positive and Negative Affect Schedule (PANAS). *Journal of Cross-Cultural Psychology*, *38*, 227-242.

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, *17*, 783-805.

Tsouloupas, C.N., Carson, R.L., Matthews, R., Grawitch, M.J., & Barber, L.K. (2010). Exploring the association between teachers' perceived student misbehavior and emotional exhaustion: The importance of teacher efficacy beliefs and emotion regulation. *Educational Psychology*, *30*, 173-189.

Appendix B. Tables and Figures
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Table 1.
Descriptive Statistics and Correlations among Study Variables

	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.
1. TSES: Student Engagement (Fall)	6.95	1.13																			
2. TSES: Student Engagement (Spring)	6.71	1.43	0.49 *																		
3. TSES: Classroom Management (Fall)	7.35	1.09	0.64 *	0.44 *																	
4. TSES: Classroom Management (Spring)	7.36	1.01	0.46 *	0.69 *	0.77 *																
5. TSES: Instructional Practices (Fall)	7.66	0.92	0.68 *	0.26	0.69 *	0.67 *															
6. TSES: Instructional Practices (Spring)	7.42	0.97	0.48 *	0.43 *	0.57 *	0.64 *	0.73 *														
7. IMTS: Present-Centered Awareness	3.37	0.62	-0.01	0.47 *	0.09	0.32	0.05	0.39 +													
8. IMTS: Interpersonal Mindfulness	3.88	0.44	0.19	0.52 *	0.27	0.51 *	0.35 +	0.40 *	0.61 *												
9. FFMQ: Observing	3.26	0.60	0.21	0.44 *	0.06	0.35 +	0.17	-0.01	0.25	0.24											
10. FFMQ: Describing	3.54	0.65	0.22	0.30	-0.01	0.11	0.26	0.18	0.45 *	0.19	0.61 *										
11. FFMQ: Acting with Awareness	3.22	0.85	-0.06	0.34 +	0.09	0.22	0.02	0.27	0.87 *	0.61 *	0.18	0.38 *									
12. FFMQ: Non-Judging	3.39	0.91	-0.29	0.25	-0.22	-0.08	-0.24	0.13	0.69 *	0.26	0.11	0.35 +	0.76 *								
13. FFMQ: Non-reacting	3.08	0.51	0.03	0.29	-0.10	0.01	-0.07	0.11	0.41 *	0.39 *	0.54 *	0.45 *	0.56 *	0.48 *							
14. PANAS: Positive Affect	3.29	0.76	0.14	0.18	0.23	0.23	0.10	0.38 +	0.72 *	0.57 *	0.01	0.29	0.71 *	0.46 *	0.40 *						
15. PANAS: Negative Affect	2.02	0.85	0.16	-0.27	0.20	0.01	0.13	-0.12	-0.50 *	-0.33 +	-0.33 +	-0.37 *	-0.59 *	-0.74 *	-0.63 *	-0.35 +					
16. DTS: Distress Tolerance Total	3.66	1.02	-0.23	0.28	-0.22	-0.08	-0.25	0.16	0.46 *	0.15	0.20	0.40 *	0.55 *	0.75 *	0.65 *	0.36 *	-0.79 *				
17. MBI: Emotional Exhaustion	25.90	13.30	-0.02	-0.36 +	0.12	-0.06	0.07	0.07	-0.68 *	-0.59 *	-0.37 *	-0.36 +	-0.61 *	-0.53 *	-0.47 *	-0.43 *	0.68 *	-0.40 *			
18. MBI: Depersonalization	5.62	4.44	-0.22	-0.43 *	-0.03	-0.23	-0.22	-0.18	-0.60 *	-0.71 *	-0.39 *	-0.45 *	-0.51 *	-0.24	-0.42 *	-0.53 *	0.38 *	-0.25	0.72 *		
19. MBI: Low Personal Accomplishment	8.15	6.49	-0.37 +	-0.53 +	-0.03	-0.17	-0.17	-0.30	-0.65 *	-0.51 *	-0.48 *	-0.39 *	-0.58 *	-0.38 *	-0.47 *	-0.54 *	0.36 +	-0.40 *	0.47 *	0.38 *	

Note. Pairwise *n*s 24-30. M = mean. SD = standard deviation. TSES = Teachers' Sense of Efficacy Scale. IMTS = Interpersonal Mindfulness in Teaching Scale. FFMQ = Five-Facet Mindfulness Questionnaire. PANAS = Positive and Negative Affect Schedule (Short Form). DTS = Distress Tolerance Scale. MBI = Maslach Burnout Inventory. + p <.10, * p < .05.

Table 2.

Mindfulness as a Predictor of Change in Educators' Efficacy

	Efficacy		
	Student Engagement	**Classroom Management**	**Instructional Practices**
IMTS			
Present-Centered Awareness	0.62 *	0.32 *	0.30 *
Interpersonal Mindfulness	0.42 *	0.33 *	0.18
FFMQ			
Observing	0.42 *	0.30 *	-0.01
Describing	0.37 +	0.20	0.15
Acting with Awareness	0.54 *	0.23 +	0.33 *
Non-Judging	0.61 *	0.14	0.40 *
Non-Reacting	0.41 *	0.10	0.22

Note. All estimates are from OLS regression models where each outcome was regressed on prior efficacy, gender, years of experience, and one measure of mindfulness. Efficacy dependent variables were measured in the spring of an academic year; all predictors were measured in prior fall of that academic year. Standardized betas are shown above. IMTS = Interpersonal Mindfulness in Teaching Scale. FFMQ = Five Facet Mindfulness Questionnaire. $+ p < .10, * p < .05.$