
Student Well-Being Interventions: The Effects of Stress Management Techniques and Gratitude Journaling in the Management Education Classroom

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Abstract

Student well-being in the management classroom is of concern to both educators and managers. Well-being is conceptualized here as students' reduction in stress, enhanced experienced meaning and engagement in the classroom, and, ultimately, heightened satisfaction with life. The authors investigated whether purposeful semester-long classroom interventions could influence these dimensions of student well-being. Specifically, the authors examined the impact of stress management techniques, gratitude journaling, a combination of stress management and journaling, and a control condition on students in four different sections of a required management course. At the end of the semester, students in the both the combined intervention and gratitude journaling treatment conditions showed a heightened level of meaningfulness and engagement in the classroom. The implications of these findings for management education research and practice as well as strengths and limitations of the research are discussed.

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The nature of the university setting focused on semester-long periods of learning and evaluation creates an environment where students are faced with ongoing challenges and pressures to meet deadlines and maintain high performance. The developing literature in positive organizational scholarship emphasizes how managers and educators may enhance the ability of employees to flourish in organizational settings rather than simply survive (Roberts, 2006) and provides the basis for investigating different classroom interventions aimed at developing student well-being. In this study, we examined the impact of stress management techniques, gratitude journaling, a combination of stress management and journaling, and a control condition on students in four different sections of a required management course. We sought to determine if these interventions would influence the specific stress students experienced, enhance the meaning of class activities, foster students' school-related engagement, and even enhance their satisfaction with life. The positive impact of these interventions on student well-being in the classroom could inform educators of novel and effective teaching interventions. These interventions are outlined below followed by a discussion of their linkage to the specific positive psychological outcomes examined in this research.

Student Well-Being

Well-being has been defined in the management literature as the overall quality of an employee's experience and functioning at work that includes three dimensions: psychological (i.e., one's subjective experience), physical (i.e., bodily health), and social (i.e., relational experiences; Grant, Christianson, & Price, 2007). The psychological and social dimensions of well-being have been assessed in one study involving MBA students. Results demonstrated that participants high in psychological and social well-being were shown to be superior decision makers, demonstrated better interpersonal behaviors, and received higher overall performance ratings than those low in well-being (Wright & Cropanzano, 2004). A more recent classroom study on the psychological and social dimensions shows that students involved in leaderless group discussions develop competencies to cope and adapt in difficult situations (Costigan & Donahue, 2009). Together, these studies suggest that interventions aimed at enhancing dimensions of student well-being should

have a positive overall impact on their lives. We hope to build on the existing research on student well-being and develop a novel understanding of the consequences of different pedagogical interventions (Bilimoria, 1999).

The management classroom should focus not only on building holistic student well-being but also on the more traditional outcome of student learning. Creating a classroom climate that is conducive to student learning is critical to the educational process. Meta-analytical research in the field of education shows that effective classroom management depends on positive student–teacher relationships and clearly established expectations, consequences, and learning goals (Marzano & Marzano, 2003). Classroom settings most conducive to learning include regular monitoring of student progress, quality and quantity of instruction provided through clear routines and the use of assessments, high levels of student/teacher interactions, and a cohesive classroom climate allowing for interactions between students in collaborative projects (Wang, Haertel, & Walberg, 1993). In a student-centered classroom, the student is central in the learning environment that focuses on global student competence, including student well-being (Stiggins, 1997). Interventions that enhance the students' abilities to handle stress can lead to improved functioning and an improvement in overall well-being that often leads to higher goal attainment by individuals (Ryan & Deci, 2000). Furthermore, identification of research-supported innovative teaching methods that enhance student well-being advances the enterprise of management education (Bilimoria, 1999).

Student Well-Being Interventions

Stress management techniques. Extant research has examined the implementation of stress management techniques within a classroom setting on students' well-being. For example, research on nursing education demonstrated that the use of multimodal stress management technique training resulted in reductions in (a) state anxiety, (b) trait anxiety, and (c) state anxiety prior to test taking; however, this decreased anxiety did not influence academic performance (Charlesworth, Murphy, & Buetler, 1981). Other research found that stress management techniques reduced students' job dissatisfaction and sickness (Jones & Johnston, 1998) and improved student creativity (Raynolds & Raynolds, 1989), interpersonal skills (Human, Kilbourne, & Clark, 1999), and speaking skills (Field, 1981). Interestingly, although these studies demonstrate the beneficial effects of using stress management techniques in the classroom, there is a dearth of current research on this topic within postsecondary education settings beyond the late 1990s (Kraag, Zeegers, Kok, Hosman, & Abu-Saad, 2006).

In this study, we focused on four specific stress management techniques that the extant research and our own pilot study suggested were potentially efficacious interventions and investigated their influence on classroom-specific stress outcomes. These stress management techniques were (a) deep breathing, (b) progressive muscle relaxation, (c) guided imagery, and (d) positive self-talk (see Appendix A for a detailed description). *Deep breathing* is the act of breathing deep into one's lungs by flexing one's diaphragm rather than breathing shallowly by flexing the rib cage. Deep breathing has been shown to decrease anxiety and increase focus and attention (Brown & Gerbarg, 2005). *Progressive muscle relaxation* is a self-relaxation procedure where physical and mental relaxation response is elicited through tightening and then relaxing specific muscles (Stetter & Kupper, 2002). *Guided imagery* involves the daily practice of repeating a set of visualizations that induce a state of relaxation and has been shown to reduce anxiety (Hammer, 1996; Raynolds & Raynolds, 1989). *Positive self-talk* is a broad term for practices of internal dialogue conducted by a sole practitioner without much, if any, external aid, often for the purpose of self-transformation (Kendall, Howard, & Hays, 1989). A review of studies of stress management techniques used in medical education shows that an increase in the use of positive coping skills by students is associated with a decrease in anxiety (Shapiro, Shapiro, & Schwartz, 2000). Finally, a study using relaxation techniques with college students outside of the classroom found a relationship between the use of such techniques and a reduction in anxiety and reported stress (Deckro et al., 2002).

Gratitude journaling. Recent work emerging in the positive psychology area suggests that a somewhat different form of classroom intervention may lead to positive well-being outcomes—a gratitude journaling process (Emmons & McCullough, 2003; Watkins, Woodward, Stone, & Kolts, 2003). Gratitude journaling involves individuals regularly identifying specific aspects of their recent life experiences for which they are thankful. Several classroom studies of adolescents counting their blessings through journaling have shown a positive relationship between such gratitude and satisfaction with their school experiences over time, positive affect, and both global and domain-specific life satisfaction (Froh, Sefick, & Emmons, 2008; Froh, Yurkewicz, & Kashdan, 2009). This form of positive journaling has also been associated with heightened levels of individuals' well-being especially in the area of positive affect and improved interpersonal relationships (Emmons & McCullough, 2003; Watkins et al., 2003).

In this research study, we were interested in investigating whether stress management and gratitude journaling interventions would influence a variety of student well-being indicators. Specifically, would these classroom interventions influence

the specific stress students experienced, have a positive effect on how meaningful they perceived class activities, foster engagement in their school work, and/or even enhance their felt satisfaction with life? Each of these dimensions of student well-being and the hypotheses we developed are described below. As we describe in detail in the Method section, we examined the effects of three different treatment conditions and one control condition: (a) stress management techniques, (b) gratitude journaling, (c) combined stress management techniques and gratitude journaling, and (d) a control condition with no intervention. The hypotheses developed below discuss the expected differences between the treatment groups, with no change expected in the control condition.

Stress

In this research, we first focused our attention on the specific stress students experience in the classroom rather than more globally since we expected that interventions focused on practicing stress management techniques within the context of the classroom should have their greatest influence on context-specific stress outcomes. We used the seminal work of Cohen, Kamarck, and Mermelstein (1983) in developing a reliable and valid measure of stress as our foundation for a context-specific measure of stress. We expected that students who effectively used the stress management techniques would feel (a) less upset or angered by unexpected classroom events, (b) more confident in their abilities to handle class-related problems, (c) more in control of classroom activities and less nervous about the class, and (d) more “on top of things” in the class. Thus, we expected students who were exposed to the stress management techniques would have lower stress levels than those in the other conditions if they applied this new knowledge to their classroom experiences. Since gratitude journaling was focused on being thankful for positive events in one’s life and not in managing the negative aspects, we did not expect students in that condition to differ from the control group. Thus, our first hypothesis of this research is offered below:

Hypothesis 1: The stress management techniques treatment and the combined stress management techniques/gratitude journaling treatment should result in lower student classroom-specific stress levels than the journaling only or control conditions.

Meaningfulness

In the psychology literature, *meaning* has been defined as the personal significance that an individual experiences based on his or her underlying and

enduring beliefs and values. Experiences help shape these beliefs and values and affect one's appraisal and understanding of the personal significance of situations (e.g., Leventhal, Diefenbach, & Leventhal, 1992; Park & Folkman, 1997). Within the management literature, *meaningfulness* has been defined as the value of a work goal or purpose, judged in relation to an individual's own ideals or standards (Hackman & Oldham, 1980; May, Gilson, & Harter, 2004; Pratt & Ashforth, 2003; Renn & Vandenberg, 1995). Meaningfulness in both areas—psychology and management—has focused on an individual's self-determination, social relations, and purpose (Csikszentmihalyi, 1990; Hackman & Oldham, 1980; May, 2004; Park & Folkman, 1997). When experienced at work, meaningfulness has been related to job enrichment, work role fit, and coworker relations (May, Gilson, & Harter, 2004). People who experience meaningful roles report a sense of shaping their external world where they feel influential, as well as a sense of being valuable. A lack of meaning is associated with individuals' perception that little was asked or expected of them and that there was little room for them to give or receive in their work role performances (Kahn, 1990).

The classroom interventions discussed above are likely to have important influences on the meaning that students experience from classroom activities. In particular, gratitude journaling, which involves reflecting on the positive value of recent life events, should heighten feelings of overall meaning. Therefore, treatment conditions that involve journaling should have more positive impact on meaningfulness than those without (i.e., the stress management techniques alone and the control condition). Stress management techniques are often focused on minimizing the negative influences on the self rather than accentuating the positive. Based on this discussion, the following hypothesis is offered:

Hypothesis 2: The gratitude journaling treatment and the combined stress management techniques/gratitude journaling treatment should result in higher classroom meaningfulness than the stress management techniques treatment and control conditions.

Engagement

Engagement can be seen when individuals bring their personal selves into alignment with their work roles and are able to employ and express themselves physically, cognitively, and emotionally within the job role (Kahn, 1990). Kahn maintains that individuals can choose to engage or disengage in an employment role. Highly engaged employees become physically involved in

tasks, cognitively vigilant, and emotionally “connected to others in the service of the work they are doing in ways that display what they think and feel, their creativity, their beliefs and values, and their personal connections to others” (p. 700). Engagement is fostered by the meaning that individuals feel in their work lives. Indeed, meaning is one of the primary drivers of engagement at work (May et al., 2004). Furthermore, individuals’ identification, absorption, and the physical energy they devote to their jobs are all associated with their level of engagement at work (Lovelace, Manz, & Alvez, 2007; May et al., 2004).

Similar to May et al. (2004) and Saks (2006), Bakker and Schaufeli (2008) define engagement as being developed through the existence of motivating resources such as supervisor and coworker support and recognition, performance feedback, and opportunities for new skill development. In terms of organizational outcomes, employees’ levels of engagement have been found to be significantly correlated with the business-unit level outcomes of employee turnover, customer satisfaction, loyalty, safety, and to a lesser degree, productivity and profitability criteria (Harter, Schmidt, & Hayes, 2002). Specific to the educational environment, the engagement dimension of “vigor” has shown an association with classroom performance in a university setting (Schaufeli, Martínez, Pinto, Salanova, & Bakker, 2002). Other researchers suggest that reflective learning strategies could enhance student emotional engagement in classroom activities (Hedberg, 2009).

The current research examined the influence of the stress management and gratitude journaling interventions on classroom engagement. As noted above, engagement should be enhanced when individuals experience more meaning in their roles (Kahn, 1990; May et al., 2004). Reflection on the positive value of events in the classroom context is likely to enhance students’ feelings of meaning and engagement in the classroom. Thus, students in treatment conditions that include gratitude journaling should experience greater engagement than those who are not required to do such reflection. To this end, the following hypothesis is offered:

Hypothesis 3: The gratitude journaling treatment and the combined stress management techniques/gratitude journaling treatment should result in higher levels of classroom engagement than the stress management techniques treatment and control conditions.

Satisfaction With Life

A person’s overall life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985) is seen as the cognitive component of well-being (Diener, Suh, Lucas,

& Smith, 1999) and is likely to be influenced by both the stress management and gratitude interventions described above. For example, individuals who focus on what they appreciate in their lives in gratitude journaling should experience more life satisfaction than other individuals (Froh et al., 2009) as they are better able to recognize and appreciate the positive dimensions of their lives. Second, individuals who are trained to successfully cope with new demands and stressful situations should be better able to manage the stress they experience in a variety of life situations than those who do not receive such training (Jones & Johnston, 2000). Such training in stress management and gratitude journaling helps build the students' long-term well-being resources to effectively manage their overall lives. Thus, it is likely that those students who experience more positive meaning through gratitude journaling *and* who are able to successfully manage negative stressors through stress management techniques will experience the highest level of life satisfaction compared with the other intervention conditions. Thus, the last hypothesis of this study is offered below:

Hypothesis 4: The combined stress management techniques/gratitude journaling treatment should result in highest level of overall life satisfaction when compared with the gratitude journaling treatment, stress management techniques treatment, and control conditions.

Method

Participants

The participants in the study were undergraduate business majors from a large Midwestern university enrolled in organizational behavior, a required management course for all business majors in the areas of accounting, business administration, finance, information systems, management, marketing, and supply chain management. The primary course objective was to provide students with a general understanding of how people behave in organizations. Four sections of the management course were included in the study. The four sections in the study were selected based on the individual instructor's willingness to be involved in the study and to conduct one of the treatments throughout the semester in his or her course. Of the 117 students who participated in the study, 59% were male, 83% were Caucasian, 13% were Asian, 2% were African American, and 2% were Hispanic; 34% of the students were sophomores, 51% were juniors, 15% were seniors, and 1% were graduate students. The age frequencies of the students were as follows: 34% were 21

years old, 29% were 22 years old, 22% were 20 years old, 7% were 23 years old, 3% were 24 years old, 3% were 25 years old, and less than 1% were older than 30 years.

Research Design

Four different classroom treatment conditions were used in the semester-long, 12-week, research study: (1) stress management techniques (SMT, $n = 29$), (2) weekly gratitude journaling (GJ, $n = 33$), (3) combined stress management techniques and weekly gratitude journaling (Combined, $n = 22$), and (4) control condition (Control, $n = 33$). Each treatment condition is described in more detail below. All students in each of the conditions (including the Control) completed a pre- and posttest survey.

Stress management training. Every 3 weeks, a trained stress management facilitator presented a new “stress management technique” in the first 10 minutes of the class to the instructor and the students in the SMT and Combined conditions. They were told the benefits of this technique and the proper use of the technique, and were encouraged to use this technique inside and outside the classroom. The trainer then facilitated the students and the instructor through the use of the new technique. The students, under the direction of the classroom instructor, were then given time (3-5 minutes) to use this technique at the beginning of every class session for the next 3 weeks. Four different stress management techniques were presented during the semester: deep breathing, progressive muscle relaxation, guided imagery, and positive self-talk (see Appendix A for a description of each technique). A pilot study helped the researchers select the specific stress management techniques to be used in the main study.

Weekly gratitude journaling. In this treatment condition, students were asked by their instructor to complete a gratitude journal for 12 weeks in which they listed up to five things they were thankful for in their lives. Students accessed and completed the journal via the university’s course management site. Students were asked to complete the journal each week prior to the beginning of the week’s first class.

Combined stress management training and weekly gratitude journaling. In the Combined treatment condition, students were exposed to both the stress management techniques throughout the semester as well as asked to complete a gratitude journal for 12 weeks. Students were also asked to reflect on their experiences in using the stress management techniques.

Control group. In the control group, students were given the pre- and posttest surveys at the beginning and end of the semester. The control group

participants were not exposed to the focal stress management interventions or gratitude journaling, but the instructor included a standard textbook chapter pertaining to stress management in the course, assuring that all students were presented with stress-related information as part of the course curriculum.

Potential Validity Threats

Given this study used a quasi-experimental design (Cook & Campbell, 1976), the authors took steps to try to minimize the impact of a number of potential validity threats. First, since the use of the same instructor for all four classroom conditions was not feasible, the research team selected instructors teaching different sections of the same course who were experienced, possessed similar teaching styles and methods, and used similar course materials. For example, all instructors emphasized experiential classroom learning through group activities and used the same textbook. In addition, members of the research team met regularly with the instructors of the experimental conditions throughout the semester to explain the standardized rationale behind the different treatments (e.g., the stress management and journaling techniques) and provide written guidelines and time frames for intervention implementation and data collection to minimize instructor differences. Finally, three of the four instructors selected were female.

Second, two research team members also served as instructors in the study. This might lead to experimenter expectancies in which a researcher influences participants' responses by conveying expectations about desired responses (Cook & Campbell, 1976). To minimize this potential validity threat, the treatments were standardized across all sections using scripts read by outside trained facilitators and audio–video web links for the stress management techniques (see Appendix A). To mitigate any instructor–student coercion, a research team member who was *not* the course instructor administered the pre- and postsemester survey to all students. Additionally, all instructors gave extra credit for completion of these surveys to minimize any instructor bias in participants' responses.

Finally, we considered the potential validity threat associated with participant selection for the treatment groups. Participant selection bias might exist if there were systematic differences across conditions in the subjects' characteristics. To minimize this threat, we chose a required course that all business students were required to take. Post hoc statistical evidence demonstrated that the demographics across the four conditions were not statistically different for gender, ethnicity, academic year, or reported grade point average (GPA).

Measures

The pre- and postsemester surveys included measures of classroom-specific stress, meaningfulness, engagement, and life satisfaction. The complete list of scale items used is shown in Appendix B, and a sample item is shown for each scale below. All scales were rated on a 7-point Likert-type scale (1 = *strongly agree*, 7 = *strongly disagree*).

Stress. The 10-item Perceived Stress Scale (Cohen, 1984) was adapted to measure the student's classroom-specific stress level. A sample item is "In the last month, how often have you felt nervous and 'stressed' about Mgmt XXX?" Cronbach's alpha for Time 1 was .85 and for Time 2 it was .83.

Meaningfulness. Ten items were adapted from May (2004) to measure meaningfulness in a classroom setting. A sample item is "The work I do for this class is very important to me." Cronbach's alpha for both Time 1 and Time 2 was .94.

Engagement. Ten items were adapted from an existing scale of engagement (May et al., 2004) to measure the student's level of engagement in the course. A sample item is "Doing work for Mgmt XXX is so absorbing that I forget about everything else." This study's Cronbach's alpha at Time 1 was .69 and at Time 2 it was .74.

Life satisfaction. The 5-item Satisfaction With Life Scale (Diener et al., 1985) was used to measure life satisfaction in this research. One sample item is "I am satisfied with my life." Cronbach's alpha for this scale at both Time 1 and Time 2 was .89.

Results

Table 1 presents the means, standard deviations, correlations, and scale reliabilities for each of the measures. Confirmatory factor analysis (CFA) was done to verify that all the scale items do in fact load on the identified construct. LISREL was used for the CFA and a good model fit was found (root mean square error of approximation [RMSEA] = .06, nonnormed fit index [NNFI] = .95, comparative fit index [CFI] = .96). The full model CFA revealed strong loadings by scale items on the appropriate scales, with no item cross-loadings. Additionally, all correlations were in the expected direction. Thus, measurement validity was supported with convergent and divergent evidence.

One-way analysis of covariance (ANCOVA) was conducted for each of the dependent variables and hypotheses to examine significant differences across the treatment conditions: SMT, GJ, Combined, and Control. ANCOVA was

Table 1. Descriptive Statistics, Correlations, and Scale Reliabilities Among the Variables

Variable	M1	SD1	M2	SD2	1	2	3	4
Engagement	3.88	0.66	4.03	0.60	(.74)	.72	.12	.22*
Meaningfulness	4.53	0.96	4.39	1.07	.65	(.94)	.02	.18
School-specific stress	2.37	1.00	2.58	1.02	-.16	-.18	(.83)	-.28
Life satisfaction	4.98	1.34	5.14	1.26	.17	.25	-.28	(.89)

Note: Correlations for the pretest variables are below the diagonal, and correlations for the posttest variables are above the diagonal. Time 2 scale reliabilities are shown along the diagonal. Correlations greater than .22 are significant at the $p < .01$ level and are given in boldface. * $p < .05$.

determined to be the most appropriate analysis because of (a) a moderate correlation (.65) between two dependent variables, meaningfulness and engagement, which would have led to power issues in the use of multivariate analysis of variance, and (b) the categorical nature for the grouping/treatment variable (Green & Salkind, 2008; Tabachnick & Fidell, 2007). The ANCOVA analysis showed that two of the dependent variables had significant treatment effects. These were the students' reported perceptions of (a) class meaningfulness (Hypothesis 2) and (b) class engagement (Hypothesis 3). The students' perceptions of classroom-specific stress (Hypothesis 1) and life satisfaction (Hypothesis 4) were not significantly affected by the treatment conditions.

In Hypothesis 2, the ANCOVA for the students' reported postmeaningfulness dependent variable included four groups: (a) SMT, (b) GJ, (c) Combined, and (d) Control condition. The initial analysis included the control variables—gender, academic year, race, religion, GPA, and participation in nonclassroom activities—to test their significance. None of the control variables were found to be significant; therefore, the remaining analyses were conducted without them in the model.

The overall ANCOVA postmeaningfulness model was significant, $F(4, 112) = 10.08$, mean square error (MSE) = 12.42, $p = .001$, and accounted for 27% of the students' postmeaningfulness perceptions, based on the partial η^2 value. The ANCOVA analysis revealed a significant treatment effect, $F(3, 112) = 3.24$, $MSE = 4.0$, $p = .03$, partial $\eta^2 = .08$ (see Table 2). The strength of the relationship between all the conditions and the students' postmeaningfulness perceptions was moderate, as assessed by the partial η^2 , with the treatment condition accounting for 8% of the variance of the students' postmeaningfulness perceptions, when the students' premeaningfulness perceptions were held constant.

Table 2. Meaningfulness: Between-Subjects Effects at Time 2, Controlling for Time 1 Values

Source	Type III SS	df	MSE	F	Significance	Partial η^2
Corrected model	49.68 ^a	4	12.42	10.08	.00**	.27
Intercept	22.28	1	22.28	18.09	.00**	.14
Meaningfulness, Time 1	38.96	1	38.96	31.62	.00**	.22
Treatment	11.96	3	3.99	3.24	.03*	.08
Error	137.97	112	1.23			
Total	2484.56	117				
Corrected total	187.65	116				

Note: *MSE* = mean square error. All control variables were found to be nonsignificant. Both the premeaningfulness student values and treatment condition were significant predictors of the postmeaningfulness student values.

^a $R^2 = .265$ (adjusted $R^2 = .238$).

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

The means of the students’ postmeaningfulness perceptions adjusted for initial differences (students’ premeaningfulness perceptions) were ordered across the four conditions as follows (see Figure 1). The SMT treatment had the lowest adjusted mean ($M = 4.05$), the Control condition had the second lowest adjusted mean ($M = 4.25$), the journaling-only treatment had the second highest adjusted mean ($M = 4.61$), and the Combined treatment had the highest adjusted mean ($M = 4.94$). Follow-up tests were conducted to evaluate pairwise differences among these adjusted means. Based on the least significant difference procedure, the adjusted means for the Combined treatment differed significantly from the Control treatment ($p = .03$) and the SMT treatment condition ($p = .005$). The GJ treatment also significantly differed from the SMT treatment ($p = .05$), but not the Control condition ($p = .20$). Therefore, Hypothesis 2 was partially supported.

To test Hypothesis 3, an ANCOVA was also conducted across the four treatment conditions for the students’ postengagement perceptions with the students’ pre-engagement perceptions as the covariate. The initial analysis again included the control variables—gender, academic year, race, religion, GPA, and non-classroom activities—to test for their significance in explaining postengagement’s variance. None of the control variables were found to be significant; therefore, the remaining analyses were conducted without them in the model. The ANCOVA model significantly predicted postengagement’s variance, $F(4, 111) = 11.96$, $MSE = 6.50$, $p = .001$, partial $\eta^2 = .30$ (see Table 3). The overall model accounted for 30% of the postengagement variance, with the classroom

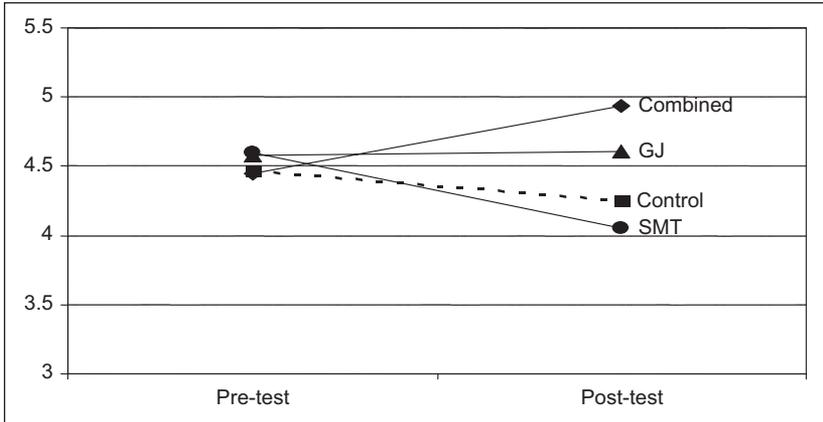


Figure 1. Meaningfulness in pre- and posttreatment

Note: SMT = stress management techniques; GJ = weekly gratitude journaling; Combined = combined stress management techniques and weekly gratitude journaling; Control = control condition.

condition being a significant predictor, $F(3, 111) = 2.80$, $MSE = 1.52$, $p = .04$, $\eta^2 = .07$. The strength of relationship between the treatment condition and student postengagement perceptions was moderate, as assessed by the partial η^2 , with the treatment condition accounting for 7% of the variance of the postengagement perception, when the pre-engagement perception was held constant.

The means of the student postengagement perceptions adjusted for the initial differences (pre-engagement scores) were ordered as expected across the four conditions (see Table 4). The Control had the lowest adjusted mean ($M = 3.80$), the SMT treatment had the second lowest adjusted mean ($M = 3.86$), the GJ treatment had the second highest adjusted mean ($M = 4.09$), and the Combined treatment had the highest adjusted mean ($M = 4.33$). Figure 2 illustrates the increase in students' engagement in the Combined and GJ treatment conditions, whereas the students' engagement declined in the SMT and Control conditions. Follow-up tests were conducted to evaluate pairwise differences among these adjusted means. Based on the least significant difference procedure, the adjusted means for the Combined treatment differed significantly from the SMT treatment ($p = .03$) and the Control condition ($p = .01$). The adjusted mean for the GJ treatment conditions did not differ significantly from the SMT treatment and control conditions. Therefore, Hypothesis 3 was also partially supported.

Table 3. Engagement: Between-Subjects Effects at Time 2, Controlling for Time 1 Values

Source	Type III SS	df	MSE	F	Significance	Partial η^2
Corrected model	26.006 ^a	4	6.50	11.96	.00**	.30
Intercept	12.08	1	12.08	22.23	.00**	.17
Engagement, Time 1	20.62	1	20.62	37.93	.00**	.26
Treatment	4.57	3	1.52	2.80	.04*	.07
Error	60.34	111	0.54			
Total	1941.55	116				
Corrected total	86.35	115				

Note: MSE = mean square error. All control variables were found to be nonsignificant. Both the preengagement student values and treatment condition were significant predictors of the postengagement student values.

^aR² = .301 (adjusted R² = .276).

*p < .05. **p < .01.

Table 4. Adjusted Means and Standard Deviations by Treatment Conditions

Treatment	Meaningfulness		Engagement	
	Pretest	Posttest	Pretest	Posttest
Combined	4.45 (0.99)	4.94 (0.91)	3.99 (0.49)	4.33 (0.53)
SMT	4.60 (0.99)	4.05 (1.02)	4.00 (0.66)	3.86 (0.62)
GJ	4.58 (0.66)	4.61 (1.15)	3.72 (0.52)	4.09 (0.54)
Control	4.47 (1.17)	4.25 (1.08)	3.87 (0.87)	3.80 (0.66)

Note: SMT = stress management techniques; GJ = weekly gratitude journaling; Combined = combined stress management techniques and weekly gratitude journaling; Control = control condition. Standard deviations are in parentheses.

Hypothesis 1 predicted that student use of the stress management techniques in the Combined and SMT treatments would decrease student stress in the class. However, average classroom student stress actually increased somewhat between the beginning and end of the semester (see Table 1). Additionally, the students' life satisfaction was not significantly affected by the classroom interventions. Therefore, Hypotheses 1 and 4 were not supported.

Examination of the students' narrative journal responses do provide some evidence that the interventions may have had some positive benefits on stress reduction as well as student performance and learning. Such qualitative responses provide an additional, alternative method of data collection advocated by some education researchers (Schmidt-Wilk, 2010). Specifically, the following benefits

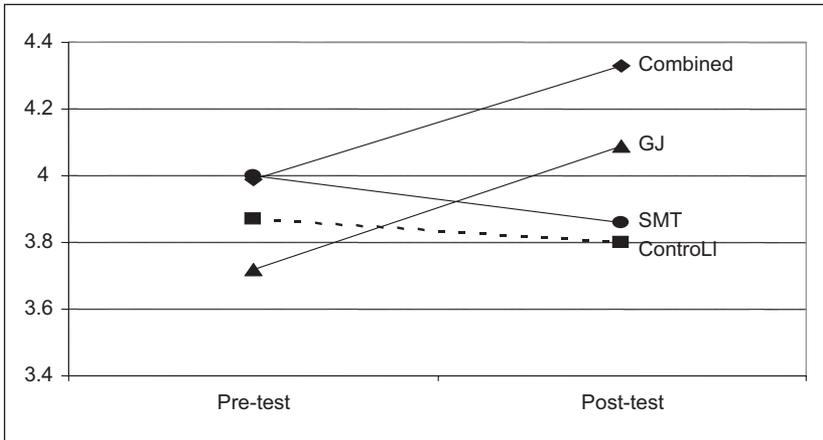


Figure 2. Engagement in pre- and posttreatment

Note: SMT = stress management techniques; GJ = weekly gratitude journaling; Combined = combined stress management techniques and weekly gratitude journaling; Control = control condition.

of the interventions were identified (with the percentage of students reporting that benefit): (a) decreasing stress (26%), (b) having a calming effect (14%), (c) helping them relax (14%), (d) helping them increase their focus (12%), and (e) helping them increase their performance in some way (10%). One could argue that these improvements in relaxation, calming, and focus are the potential building blocks for improved classroom performance, including learning. The following student comments illustrate evidence of the performance benefits they derived from the stress management and journaling interventions:

I do feel like the deep breathing technique did help me with my classroom performance because it was able to help calm me down before tests so that I could perform better. Deep breathing and guided imagery have helped me manage my stress better and helped me relax.

I found the positive self-talk technique helpful this week. I had a lot of school things going on and found it helpful when dealing with completing these tasks and my performance on each task. When I found myself getting discouraged it helped to spin my perception of the situation into a more positive one.

Discussion

Summary of Findings

This research study used the stress and the emerging positive organizational scholarship literatures to examine the impact of classroom interventions on measures of student well-being. This study's findings suggest that to heighten students' levels of meaningfulness and engagement in their courses, a combination of stress management techniques and gratitude journaling is the most effective approach. The classroom interventions did not have a significant quantitative effect on either classroom-specific stress or overall life satisfaction in contrast to what was originally hypothesized.

Future Research

The pattern of adjusted means for students' meaningfulness across the conditions suggests that combining the gratitude journaling with the stress management techniques led to the highest levels of student-experienced meaningfulness and engagement, with the gratitude journaling-only treatment only having slightly higher levels of meaningfulness than the other conditions. Overall, this finding suggests that the process of gratitude journaling may help individuals recognize and clarify what is most important to them in their lives, but it appears to work best with interventions aimed at lowering the negative stress in their lives. These findings somewhat reinforce previous research that has demonstrated that positive affect and improved interpersonal relations are outcomes of gratitude journaling (Emmons & McCullough, 2003; Watkins et al., 2003) and often central to meaning that individuals experience (May, 2004). Future research should investigate whether *daily* rather than just weekly (as used in this study) gratitude interventions in the classroom helps students focus on the positive elements of their academic experience and enhance the meaning they experience in the classroom. Perhaps coupling gratitude journaling with stress management techniques may be even more critical in the workplace where stressors are numerous and take different forms than in school. Managing the negative affect one experiences at work from stressors may be somewhat necessary to appreciate the valuable dimensions of work (e.g., quality coworker relations, complex work).

Second, similar to the meaningfulness findings outlined above, we also found that the adjusted means for students' engagement in their courses were highest in the combined and the gratitude journaling condition. Such a finding is consistent with previous literature on engagement (Kahn, 1990; May et al., 2004), which suggests that meaningfulness is one of the

primary psychological states that is responsible for why individuals engage psychologically in their work. The same seems to be somewhat true for students in their coursework. Of interest here is also the fact that stress management techniques (combined with gratitude journaling) appeared to assist individuals somewhat in engaging in their work. Such a finding seems consistent with Kahn's (1990) notion of the psychological "availability" of resources one possesses to be able to engage. Stress management techniques may free up more cognitive and emotional resources that allow individuals to engage in their chosen activities. Future research in the classroom and workplace should continue to tease apart the relation of stress management techniques to the different psychological states of engagement.

Third, the findings in this study revealed that the treatment conditions did not influence the level of classroom-specific stress that students experienced. This finding is inconsistent with previous work on stress management techniques (e.g., Deckro et al., 2002). It may be that the intervention for the stress management techniques was not "strong" enough to affect students' levels of stress. That is, the 3- to 5-minute practice sessions at the beginning of the class and the 3-week intervals for each self-management technique may not have been long enough for students to effectively learn each technique. Indeed, behavior modification research suggests it takes at least six continuous months of consistently engaging in the new activity for it to become part of an individual's regular behavior (Centers for Disease Control and Prevention, 2007). Qualitative, self-reported data may yield the answer regarding which of the four techniques was used most often and which one was most effective at reducing students' stress levels.

Fourth, the results of this research study also did not demonstrate any differences between the treatment conditions for the students' satisfaction with life. We were hopeful that if students took the opportunity to focus on what was important in their lives through the gratitude journaling, they would enhance their life satisfaction. Indeed, previous research has shown that individuals are more likely to "flourish" under such conditions by experiencing more positive emotions and life satisfaction (Froh et al., 2008; Froh et al., 2009). Future research should explore whether longer term interventions (perhaps across an entire school year) will lead to higher levels of life satisfaction. It also may be that students are in such a turbulent time in their personal development that such interventions will not affect their life satisfaction. Alternatively, it may be the timing of the assessments in the study. Future research should investigate assessing student stress and life satisfaction after or significantly before the end of the semester.

Finally, some instructors may not have emphasized the importance of using the gratitude journaling and stress management techniques to enhance students' learning. Research demonstrates how individuals who identify areas of gratitude broaden their cognitions and develop an ability to learn new things (Fredrickson, 2001; Tugade, Fredrickson, & Barrett, 2004). Future research should be conducted in classrooms that explicitly tie the use of the interventions to course learning objectives and examine the efficacy of the different interventions in influencing student learning. Future research should also specifically explore the relative effectiveness of the four different stress management techniques for students by testing the techniques independently in separate classrooms. The use of multiple classroom iterations of the interventions may also provide knowledge about viable ways to enhance student well-being and learning (Schmidt-Wilk, 2010).

Strengths and Limitations

As with any research study, this study had both strengths and limitations. In terms of strengths, first, the design of the study allowed for an assessment of the interventions in actual classroom settings. Second, the researchers were able to incorporate the use of interventions at the beginning of every class for several minutes without detracting from the established course curriculum. Third, the design of the study incorporated a thorough testing of the different interventions by four distinct treatment conditions (SMT, GJ, Combined, and Control condition). Fourth, the use of the audio and video clips in the interventions allowed for standardization and consistency across treatment conditions.

The findings and implications of this study need to be considered in light of its limitations. First, the timing of the measurements during the semester may have influenced the levels observed in some of the dependent variables, particularly stress. The typical school semester often has more workload toward the end, so future research may wish to measure stress levels prior to the last week of classes in contrast to what was done in this study. Second, this study was limited by the relatively small and unequal sample sizes within each classroom, which may have affected our ability to detect significant differences among the treatment conditions. Third, the reliability coefficient of engagement was somewhat low at Time 1 (.69), yet although low reliability often reduces relations between variables, significant associations were still found for the engagement outcome in this study. Fourth, the adapted measures were not pilot tested; however, a CFA and Cronbach's alpha coefficients demonstrated that the validity and reliability were supported. Additionally, the authors recognize that future research may help tease apart the specific effects of the different stress management techniques regarding ones that

seem to work best with the gratitude journaling intervention. Fifth, research that examines the effects of these interventions while holding the instructor constant and holding the student's prior use of stress management techniques constant should also be conducted. Sixth, there was limited diversity in the student participants with 83% being Caucasian. Future research should explore the generalization of these findings to more diverse student populations.

It is also important for educators to realize that not every student will find these interventions useful. A small number of students noted in their journals that the interventions did not help them, or that they were already effectively dealing with their stress through other means. To mitigate any student resistance to using the interventions in the classroom, instructors reminded students during class that they did not have to participate in the given intervention, but that they needed to be respectful of classmates who did. Finally, the presence of unhealthy student responses to exacerbated stress levels may be particularly evident to future instructors within student journal responses. Instructors using these classroom techniques need to realize that they do not replace the use of mental health professionals and that any student facing elevated stress levels should always be encouraged to use campus or independent counseling center resources.

Management Education Implications

The findings of this study provide support for the student well-being benefits of teaching stress management techniques and gratitude journaling to students in management education classes. As management educators, we all would ideally like our students to find course material meaningful and to be engaged in the learning process. By asking students to reflect on these different techniques to manage stress and be thankful for positive events in their lives, we can achieve these lofty goals. Instructors can incorporate the use of these techniques into their classrooms with relative ease and little classroom time. Step-by-step instructions for implementing these techniques within the classroom setting are provided in Appendix A. Students can benefit from this new-found knowledge on stress management by applying these concepts to other classes in their schedule. Indeed, some students reported using this knowledge of stress management techniques to prepare for other class quizzes, presentations, and group work. Students may also even start to teach fellow students the stress management and gratitude techniques such that an upward spiral of positive emotions may begin to flow among students in a program reducing interpersonal conflicts and unleashing new levels of creativity in the students (Fredrickson, 2003). In conclusion, we were encouraged by the positive impact of these straightforward classroom interventions and hope that other management educators consider implementing them!

Appendix A

Description of Student Well-Being Interventions Used in the Study^a

Name of Technique	Purpose
Gratitude journal	<p>Description: The oldest and most widely practiced form of self-help through writing is that of keeping a personal journal (as distinct from a diary of weekly appointments) in which the writer records his or her most meaningful thoughts and feelings. This journaling will focus on things the writer is grateful for.</p> <p>Implementation (2 options):</p> <ol style="list-style-type: none"> 1. Students use the same journal for the semester and are given 3-5 minutes at the beginning of each class to list 5 things they are grateful for at that moment. This procedure can assist the student in developing a positive mind-set for the class. 2. Students can be asked to complete this online journal daily or weekly via access to a link to the institution's web-based learning tool. The teacher can develop a standardized format for the journal. This process can assist the student in developing lifelong learning strategies of stress management, but will be less applicable to the classroom setting. <p>Questions in Weekly Gratitude Journal:</p> <p>There are many things in our lives, both large and small, that we might be grateful about. Think back over the past week and write down on the lines below up to five things in your life that you are grateful or thankful for. <i>Examples of gratitude-inducing experiences listed by participants were as follows: "waking up this morning," "the generosity of friends," "to God for giving me determination," and "for wonderful parents."</i></p>
Stress management techniques Deep breathing	<p>Description: The technique demonstrates the act of breathing deep into your lungs by flexing your diaphragm rather than breathing shallowly by flexing your rib cage. It is generally considered a healthier and fuller way to ingest oxygen, and is often used as a therapy for hyperventilation and anxiety disorders. During stress and anger, we tend to inhale and hold our breath. The most significant, therapeutic aspect of this breathing is the exhalation—which is at least two times the length of the inhalation. The exhalation alerts the body that it can relax and resume essential body functions and not remain in a state of fight or flight.</p>

(continued)

Appendix A. (Continued)

Name of Technique	Purpose
Progressive muscle relaxation (PMR)	<p>Implementation: Teacher dims light and asks students to get in comfortable seated position seated upright in a chair to allow for full lung inhalation. Teacher directs students to inhale over 4 seconds (teacher slowly counts out loud), hold the breath for 4 seconds (again teacher counting), and then exhale over 4 seconds (again teacher counting). After leading the students through the pattern for about the first minute, the students are usually able to continue on their own for the next few minutes, as the teacher provides relaxation reminders (e.g., relax the shoulders, relax the face muscles, think calm thoughts as you exhale).</p> <p>Description: A technique for reducing anxiety by alternately tensing and relaxing the muscles. Since muscular tension accompanies anxiety, one can reduce anxiety by learning how to relax the muscular tension.</p>
Guided imagery	<p>Implementation: This one is best implemented with the use of a professionally guided script (there are many great sources online, CDs, or printed scripts). This technique can be challenging and takes more practice to become comfortable with it. This technique takes 5 minutes minimum; there are versions available that take up to 20 minutes.</p> <p>Students are instructed to focus on the tension building when they are contracting an area's muscles (e.g., forearm). When they relax that area to feel the difference in tension, they focus on the experience of relaxing. When one is able to fully relax a body part, it becomes heavy, loose, and the body's overall sense of tension diminishes, which is tied to the body's sense of stress. At a minimum this technique can help students start to recognize when they are unconsciously developing tense muscles and the feeling they want to return to in order to have that relaxed, heavy feeling back.</p> <p>Description: The technique involves the daily practice of sessions where the practitioner will repeat a set of visualizations that induce a state of relaxation. It is a process by which an individual trains the subconscious mind to believe something, or systematically schematizes the person's own mental associations, usually for a given purpose. There are many different approaches and goals for guided imagery. The one we implemented focused on allowing the mind to reveal to the individual student a place where they felt calm, relaxed, and confident.</p>

(continued)

Appendix A. (Continued)

Name of Technique	Purpose
<p>Implementation:</p> <p>Teacher dims lights and asks students to get in comfortable seated position seated upright in a chair to allow for full lung inhalation Teacher directs students to start with their deep breathing technique. This technique is used to relax, become internally focused, and clear the mind (as a blank slate). Give at least a minute of deep breathing to get there.</p> <p>With your mind's eye closed tell/ask your mind to take you to where you feel the most confident, composed, and calm (rather than telling your mind where you would like to go specifically, like the beach).</p> <p>Once you sense your mind has placed you in that location, open your eyes and take in the scene. Absorb all there is about this place by using all your senses, and focus on how you feel here. The point of visiting this place is to identify that calm and confident sense, so you may hold on to it and use it in your upcoming day/events.</p> <p>After holding onto that sense for a few minutes and enjoying being in that selected place, slowly close your mind's eye, allowing your mind to return to a blank slate. While you focus on maintaining that composed feeling, focus on your deep breathing, and then return to your present location.</p>	
<p>Positive self-talk</p>	<p>Description: Used as a broad term for practices done by a sole practitioner without much, if any, external aid, often for the purpose of self-transformation. This technique can be used in a wide variety of ways (e.g., general positive self-image to positive visualization of a specific task, such as test taking or public speaking success).</p>
<p>Implementation:</p> <p>As a pre-implementation option, the teacher may have students keep a record of their self-talk for a few days. This record can reveal areas students may want to work on and can be used to illustrate how to turn a negative self-talk phrase into a positive replacement phrase.</p> <p>For our implementation, we provided examples of how positive self-talk could be used both generally and more specifically: to break a habit of negative self-talk or to practice daily to improve one's outlook regarding a particular event (e.g., test-taking or road rage).</p> <p>This one had the greatest flexibility in student personalization. The teacher started by providing a couple stimulating examples of what they could use the positive self-talk for, and then dimmed the lights, led the students through their first minute of deep breathing, and then gave them time to focus on themselves and the positive self-talk they had selected. After 3-5 minutes of individual focus time, the teacher would bring them back to focusing on their breath and then back to the classroom, before turning on the lights and bringing the students to focus for the day's activities.</p>	

a. There are many guided stress management techniques available for free Internet download or purchase for a range of ages and preferences.

Appendix B

Scale Items Used in the Study

Perceived Stress Scale (adapted to classroom) *(from Cohen, 1994)*

In the last month, how often have you been upset because of something that happened unexpectedly in MGMT XXX?

In the last month, how often have you felt you were unable to control the important things in MGMT XXX?

In the last month, how often have you felt nervous and “stressed” about MGMT XXX?

In the last month, how often have you felt confident about your ability to handle your problems in MGMT XXX?

In the last month, how often have you felt that things were going your way in MGMT XXX?

In the last month, how often have you found that you could not cope with all the things you had to do for MGMT XXX?

In the last month, how often have you been able to control irritations about MGMT XXX?

In the last month, how often have you felt that you were on top of things with MGMT XXX?

In the last month, how often have you been angered because of the things that were outside of your control in MGMT XXX?

In the last month, how often have you felt difficulties in MGMT XXX were piling up so high that you could not overcome them?

Meaningfulness (adapted to classroom setting) *(from May, 2004)*

The work I do for this class is very important to me.

I care about the work I do in this class.

My classroom experiences in MGMT XXX are personally meaningful to me.

Most of the things I have to do in this class seem useless or trivial.

(reverse score)

The work I do for this class makes a difference.

The work I do in this class is worthwhile.

My classroom activities in MGMT XXX are significant to me.

The work I do for this class is very meaningful to me.

I feel that the work I do for my class is valuable.

I feel useful when I perform my class-related assignments.

Engagement (adapted to classroom setting) *(from May, Gilson, & Harter, 2004)*

Doing my work for MGMT XXX is so absorbing that I forget about everything else.

I often think about other things when in I am in this class. (r)

I am rarely distracted when attending this class.

Time passes quickly when I am in this class.

I really put my heart into my performance for this class.

I get excited when I perform well on my school work for MGMT XXX.

I often feel emotionally detached from my school work for MGMT XXX. (r)

My own feelings are affected by how well I perform in this class.

I exert a lot of energy performing my work for this class.

I avoid working too hard for this class. (r)

Satisfaction With Life Scale (*from Diener, Emmons, Larsen, & Griffin, 1985*)

In most ways my life is close to my ideal.

The conditions of my life are excellent.

I am satisfied with my life.

So far I have gotten the important things I want in life.

If I could live my life over, I would change almost nothing.

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References

- Bakker, A. B., & Schaufeli, W. B. (2008). Positive organizational behavior: Engaged employees in flourishing organizations. *Journal of Organizational Behavior, 29*, 147-154.

- Bilimoria, D. (1999). The *Journal of Management Education's* sections: Editorial mission and guidelines. *Journal of Management Education*, 23, 334-337.
- Brown, R. P., & Gerbarg, P. L. (2005). Sudarshan Kriya Yogic breathing in the treatment of stress, anxiety, and depression: Part II—clinical applications and guidelines. *Journal of Alternative and Complementary Medicine*, 11, 711-717.
- Centers for Disease Control and Prevention. (2007). *Transtheoretical stage model*. Retrieved from http://www.cdc.gov/hiv/topics/prev_prog/acdp/intervention/change.htm
- Charlesworth, E., Murphy, S., & Buetler, L. (1981) Stress management for student nurses. *Journal of Clinical Psychology*, 37, 284-290.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 386-396.
- Cohen, S., 1994. Perceived Stress Scale. Palo Alto, CA.
- Cook, T. D., & Campbell, D. T., (1976). The design and conduct of quasi-experiments and true experiments in field settings. In M. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 223-326). Skokie, IL: Rand McNally.
- Costigan, R. D., & Donahue, L. (2009). Developing the great eight competencies with leaderless group discussion. *Journal of Management Education*, 33, 596-616.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper.
- Deckro, G. R., Ballinger, K. M., Hoyt, M., Wilcher, M., Dusek, J., Myers, P., . . . Benson, H. (2002). The evaluation of a mind/body intervention to reduce psychological distress and perceived stress in college students. *Journal of American College Health*, 50, 281-287.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, 49, 71-75.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276-302.
- Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life. *Journal of Personality and Social Psychology*, 84, 377-389.
- Field, G. (1981). Speaking skills training. *Journal of Management Education*, 6, 53-55.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist: Special Issue*, 56, 218-226.
- Fredrickson, B. L. (2003). The value of positive emotions. *American Scientist*, 91, 330-335.

- Froh, J. J., Sefick, W. J., & Emmons, R. A. (2008). Counting blessings in early adolescents: An experimental study of gratitude and subjective well-being. *Journal of School Psychology, 46*, 213-233.
- Froh, J. J., Yurkewicz, C., & Kashdan, T. B. (2009). Gratitude and subjective well-being in early adolescence: Examining gender differences. *Journal of Adolescence, 32*, 633-650.
- Grant, A. M., Christianson, M. K., & Price, R. H. (2007). Happiness, health or relationships? Managerial practices and employee well-being tradeoffs. *Academy of Management Perspectives, 21*, 51-63.
- Green, S. B., & Salkind, N. J. (2008). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (6th ed.). Upper Saddle River, NJ: Prentice Hall.
- Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley.
- Hammer, S. E. (1996). The effects of guided imagery through music on state and trait anxiety. *Journal of Music Therapy, 33*, 47-70.
- Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology, 87*, 268-279.
- Hedberg, P. R. (2009). Learning through reflective classroom practice: Applications to educate the reflective manager. *Journal of Management Education, 33*, 10-36.
- Human, S. E., Kilbourne, L. M., & Clark, T. D. (1999). Using web-enhanced instruction in an interpersonal skills course. *Journal of Management Education, 23*, 584-606.
- Jones, M. C., & Johnston, D. W. (1998, April). *Using multivariate analysis to evaluate a worksite stress management programme*. Paper presented at the RCN Research Society, International Nursing Research Conference, Herriot Watt University, Edinburgh, Scotland.
- Jones, M. C., & Johnston, D. W. (2000). Reducing distress in first level and student nurses: A review of the applied stress management literature. *Journal of Advanced Nursing, 32*, 66-74.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33*, 692-724.
- Kendall, P. C., Howard, B. L., & Hays, R. C. (1989). Self-referent speech and psychopathology: The balance of positive and negative thinking. *Cognitive Therapy and Research, 13*, 583-598.
- Kraag, G., Zeegers, M. P., Kok, G., Hosman, C., & Abu-Saad, H. H. (2006). School programs targeting stress management in children and adolescents: A meta-analysis. *Journal of School Psychology, 44*, 449-472.
- Leventhal, H., Diefenbach, M., & Leventhal, E. A. (1992). Illness cognition: Using common sense to understand treatment adherence and affect cognition interactions. *Cognitive Therapy and Research, 16*, 143-163.

- Lovelace, K. J., Manz, C. C., & Alvez, J. C. (2007). Work stress and leadership development: The role of self-leadership, shared leadership, physical fitness and flow in managing demands and increasing job control. *Human Resources Management Review, 17*, 374-387.
- Marzano, R. J., & Marzano, J. S. (2003). The key to classroom management. *Educational Leadership, 61*, 6-13.
- May, D. R. (2004, July). *The flourishing of the human spirit at work: Toward an understanding of the determinants and outcomes of experienced meaningfulness at work*. Paper presented at the 2004 2nd European Conference on Positive Psychology, Verbania Pallanza, Italy.
- May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of Occupational and Organizational Psychology, 77*, 11-37.
- Park, C. L., & Folkman, S. (1997). Meaning in the context of stress and coping. *Review of General Psychology, 1*, 115-144.
- Pratt, M. G. & Ashforth, B. E. (2003). Fostering meaningfulness in working & meaningfulness at work: An identity perspective. In K. Cameron, J. Dutton, & R. Quinn (Eds.), *Positive organizational scholarship* (pp. 309-327). San Francisco, CA: Berrett-Koehler.
- Raynolds, P. A., & Raynolds, G. H. (1989). Jog your right brain: Fun in the classroom (and research too!). *Journal of Management Education, 13*, 7-22.
- Renn, R. W., & Vandenberg, R. J. (1995). The critical psychological states: An under-represented component in job characteristics model research. *Journal of Management, 21*, 279-304.
- Roberts, L. M. (2006). Shifting the lens on organizational life: The added value of positive scholarship. *Academy of Management Review, 31*, 292-305.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68-78.
- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology, 21*, 600-619.
- Schaufeli, W. B., Martínez, I. M., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-Cultural Psychology, 33*, 464-481.
- Schmidt-Wilk, J. (2010). Evidence: Where scholarship meets artistry. *Journal of Management Education, 34*, 195-199.
- Shapiro, S. L., Shapiro, D. E., & Schwartz, G. E. (2000). Stress management in medical education: A review of the literature. *Academic Medicine, 75*, 748-759.
- Stetter, F., & Kupper, S. (2002). Autogenic training: A meta-analysis of clinical outcome studies. *Applied Psychophysiology and Biofeedback, 27*, 45-98.

- Stiggins, R. (2000). *Student-centered classroom assessment*. Upper Saddle River, NJ: Merrill.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson Education.
- Tugade, M. M., Fredrickson, B. L., & Barrett, L. F. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of Personality, 72*, 1161-1190.
- Wang, M., Haertel, G., & Walberg, H. (1993). Toward a knowledge base for school learning. *Review of Educational Research, 63*, 249-294.
- Watkins, P. C., Woodward, K., Stone, T., & Kolts, R. L. (2003). Gratitude and happiness: Development of a measure of gratitude, and relationships with subjective well-being. *Social Behavior and Personality, 31*, 431-452.
- Wright, T. A., & Cropanzano, R. (2004). The role of psychological well-being in job performance: A fresh look at an age-old quest. *Organizational Dynamics, 33*, 338-351.