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Gratitude, gratitude intervention and subjective well-being among Chinese school teachers in Hong Kong

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This study assessed the dispositional gratitude and its relationships with orientations to happiness and burnout in a sample of 96 Chinese school teachers in Hong Kong and investigated the effectiveness of an eight-week gratitude intervention programme using a pre-test/post-test design with outcome measures of subjective well-being in the same sample of teachers. The results indicated that the dispositional gratitude of teachers correlated substantially and positively with a meaningful life orientation to happiness and with personal accomplishment, and correlated substantially and negatively with the two negative components of burnout: emotional exhaustion and depersonalisation. The effects of the gratitude intervention were evident in the increase in scores on satisfaction with life and on positive affect, especially for teachers in the low-gratitude group. Implications of the findings on the relationships between gratitude and burnout and the effectiveness of gratitude intervention for teachers of different levels of dispositional gratitude are discussed.

Keywords: gratitude; gratitude intervention; subjective well-being; Chinese teachers; Hong Kong

Introduction

Throughout history and in many cultures, gratitude has been given a central position in philosophical and theological theories in the virtue ethics tradition (Dumas, Johnson, & Lynch, 2002). The experience and expression of gratitude are regarded as enhancing for an individual's personal and relational well-being, and therefore beneficial for both individuals and society (see Harpman, 2004). Despite the fact that gratitude is universally valued, the conceptualisation and study of gratitude has attracted focused research attention within psychology only in the last decade (see Emmons & Crumpler, 2000; Emmons & McCullough, 2004; Snyder & Lopez, 2007; Wood, Joseph, & Linley, 2007).

In general, gratitude has been conceptualised at both the emotion and trait levels (e.g. Emmons, McCullough, & Tsang, 2003; Watkins, Woodward, Stone, & Kolts, 2003). As an emotion, gratitude can be understood as a subjective felt sense of wonder, thankfulness and appreciation for benefits received. As a trait, it can be understood as a predisposition to experience the state of gratitude. Although a grateful person may not experience grateful feelings at any given moment, he or she will be

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more likely to experience gratitude in particular situations. Thus, a grateful person could be said to have a lower threshold for gratitude, and might feel more gratitude than others.

In this connection, McCullough, Emmons, and Tsang (2002) distinguished four facets of grateful disposition: intensity, frequency, span and density. Accordingly, grateful people may feel gratitude more intensely for a positive event, and may report gratitude more frequently or more easily throughout the day. They may have a wider span of life circumstances for which they are grateful at any given time with a variety of other benefits (e.g. for their families, their jobs, their health and life itself), and they may experience gratitude with greater density (i.e. towards more people) for a single positive outcome or life circumstance. To examine the nature and correlates of gratitude as a disposition, McCullough et al. (2002) developed the six-item self-report Gratitude Questionnaire (GQ-6) to assess these four facets of grateful disposition. They found that high scorers on the GQ-6 reported more frequent positive emotions, life satisfaction, vitality, optimism, and lower levels of depression and stress. In addition, high scorers were also more likely to score high on measures of religiousness/spirituality, to place less importance on material goods or judge their success in terms of possessions and to engage in more pro-social behaviours (see Emmons et al., 2003; McCullough et al., 2002).

Dispositional gratitude has also been studied as one of the five character strengths related to the domain of transcendence, the other four being appreciation of beauty, hope, humour and spirituality (see Peterson & Seligman, 2004). Accordingly, character strengths in this domain allow one to forge connections to the larger universe and provide meaning, leading to greater life satisfaction. For example, Park, Peterson, and Seligman (2004) have found that, in their Internet samples of 5299 adults aged 35–40 years, the strengths of hope, zest, gratitude, love and curiosity related consistently to life satisfaction and well-being, suggesting that those who strive to develop, build and use their character strengths could become more resilient. Taken together, one might infer that grateful people might endorse less strongly an orientation that emphasises pleasure as happiness as opposed to an orientation that emphasises meaning as happiness, and they could be less vulnerable to job burnout (see Chan, *in press*). However, these conjectures, with the implications that gratitude could be a protective factor against burnout if supported, need to be more carefully examined in an empirical study.

In view of the positive benefits that can accrue from the conscious practice of gratitude, there are specific programmes developed for nurturing or cultivating gratitude in one's life. For example, Miller (1995) provided a simple four-step cognitive-behavioural approach for learning gratitude through identifying non-grateful thoughts, formulating gratitude-supporting thoughts, substituting the gratitude-supporting thoughts for the non-grateful thoughts and translating the inner feeling into outward action. Another alternative way to enhance a person's sense of gratitude is provided by Naikan therapy, a Japanese form of meditation (Krech, 2001; Reynolds, 1981). Specifically, the individual learns to meditate daily on three gratitude-related questions: What did I receive? What did I give? What troubles and difficulties did I cause to others? In so doing, gratitude meditation helps to bring about feelings of gratitude and the motivation to reciprocate. Yet, there are few studies that aim specifically to evaluate the effectiveness of these approaches in inducing or enhancing feelings of gratitude that could lead to enhanced well-being. Furthermore, it is not known whether these approaches are equally or differentially effective for grateful or less grateful individuals.

Perhaps, one of the first set of pioneering studies on gratitude interventions was the set of three studies by Emmons and McCullough (2003). In the first study, they compared people who kept weekly gratitude journals with those who recorded either neutral or negative (life stresses) in their diaries. The weekly-gratitude-journal group exercised more regularly, felt better about their lives and was more optimistic about the coming week. In the second study, the daily-gratitude-journal group replaced the weekly-gratitude-journal group. This group reported greater enthusiasm, alertness and determination, and was significantly more likely to make progress towards important goals pertaining to health, interpersonal relationships and academic performances. Those in this group were also more likely to have helped or offer emotional support to another person. In the third study, people with neuromuscular conditions were randomly assigned to either a gratitude condition or a control condition. Those in the gratitude condition were more optimistic, more energetic, more connected to others and more likely to have restful sleep. Taken together, these studies suggested that gratitude has a causal influence on well-being, and that an effective strategy to enhance well-being is to lead people to count their blessings or to reflect on those aspects of their lives for which they are grateful. The effectiveness of this count-your-blessings approach has also been supported by subsequent studies (e.g. Froh, Sefick, & Emmons, 2008; Lyubomirsky, Sheldon, & Schkade, 2005; Seligman, Rashid, & Parks, 2006; Seligman, Steen, Park, & Peterson, 2005).

There is now an accumulating body of evidence indicating a strong connection between gratitude and well-being or mental health, suggesting that gratitude as a disposition or character strength could play an important role in strength-based counselling and psychotherapy that leads individuals to live a good and satisfying life (e.g. Linley & Harrington, 2006; Park et al., 2004; Smith, 2006). Research studies have also indicated that interventions aimed at inducing and enhancing gratitude consistently have resulted in benefits, suggesting that gratitude interventions may have considerable applications to coaching and psychotherapy (see Seligman et al., 2005, 2006). However, there have been few studies that seek to address gratitude at both the disposition and the emotion levels. For example, it is not known whether gratitude intervention could be equally or differentially effective in enhancing subjective well-being of teachers who are of high or low dispositional gratitude.

With this in mind, the present study aimed to address gratitude at both the levels of disposition and emotion in a sample of Chinese teachers. First, the dispositional gratitude of a sample of Chinese teachers was first assessed, and its relationships with orientations to happiness and burnout were examined. Significant positive correlations with a particular orientation to happiness, for example, would suggest that the more grateful teachers might tend to endorse that particular orientation. Similarly, significant negative correlations with a particular negative component of burnout would suggest that the more grateful teachers might be more vulnerable to that particular component of burnout. Second, the effectiveness of an eight-week gratitude intervention programme with a pre-test/post-test design using the count-your-blessings approach with self-reflection was evaluated for the grateful and less grateful participants. Subjective well-being was used as the outcome measure for evaluation, as it has been most frequently employed in the evaluation of gratitude interventions (e.g. Seligman et al., 2005, 2006; Watkins et al., 2003) and has been used with the Chinese population (e.g. Chan, 2009). The assessment of subjective well-being followed Diener's (1984) tripartite model that includes a cognitive aspect of life satisfaction and an affective aspect encompassing the presence of positive affect and the absence

of negative affect (see also Diener, Suh, Lucas, & Smith, 1999; Robbins & Kliever, 2000).

Method

Participants

Ninety-six Chinese school teachers (17 men and 79 women) enrolled in the graduate education programme at the Chinese University of Hong Kong were recruited to participate voluntarily in an eight-week self-improvement project to enhance their self-awareness through self-reflection. These participants were between the ages of 23 and 51 ($M = 33.13$, $SD = 7.57$, based on 95 participants, as one did not report age). They were in-service teachers with 1–31 years of teaching experience ($M = 9.98$, $SD = 7.99$, based on 88 participants as eight participants did not report their years of teaching experience).

Measures

Gratitude Questionnaire (GQ-6)

Participants' dispositional gratitude was assessed by GQ-6 (McCullough et al., 2002). This six-item scale assesses four different facets of grateful disposition that include intensity (e.g. 'I have so much in life to be thankful for'), frequency (e.g. 'Long amounts of time can go by before I feel grateful to something or someone'), span or the variety of life aspects (e.g. 'As I get older, I find myself more able to appreciate the people, events and situations that have been part of my life history') and density or the number of persons that can elicit grateful feeling (e.g. 'I am grateful to a wide variety of people'). The scale has been reported to have sound psychometric properties, including a robust one-factor structure through exploratory and confirmatory factor analysis, convergent validity peer reports, correlations with well-being and discriminant validity from related traits (McCullough et al., 2002). It has now been recognised as the most widely used scale for assessing dispositional gratitude (see Emmons et al., 2003). In completing the scale, participants were requested to indicate their judgement whether the statement in each item was descriptive of him or her on a five-point scale ranging from 1 (*least like me*) to 5 (*most like me*). A total score can be obtained by summing the six-item responses (two items are reverse scored), with higher scores reflecting greater dispositional gratitude.

Maslach Burnout Inventory (MBI)

Participants' burnout was assessed using the Education Form of the 22-item MBI (Chan & Hui, 1995; Maslach & Jackson, 1986; Maslach, Jackson, & Leiter, 1996). Participants were requested to evaluate each item in terms of the frequency of their feelings ranging from 0 (*never*) to 6 (*every day*). The items are scored into the three components of Emotional Exhaustion (nine items, e.g., 'I feel emotionally drained from my work'), Depersonalisation (five items, e.g., 'I feel I treat some students as they are impersonal objects') and Personal Accomplishment (eight items, e.g., 'I have accomplished many worthwhile things in this job'). High scores on the first two scales and low scores on the last scale are indicative of burnout. The psychometric properties

of the scales in studies with the Hong Kong Chinese population have been reported in Chan and Hui (1995).

Orientations to Happiness Scale (OHS)

Participants' views on happiness were assessed using the 18-item OHS (Peterson, Parks, & Seligman, 2005). The OHS items can be scored into three scales: Life of Meaning (six items, e.g., 'My life serves a higher purpose'), Life of Pleasure (six items, e.g., 'I love to do things that excite my senses') and Life of Engagement (six items, e.g., 'I am always very absorbed in what I do'). Peterson et al. (2005) reported good reliability of the scales (Cronbach's $\alpha = .77-.88$) and good construct validity in their item factor analysis. Chan (2009) has also reported sound psychometric properties of the scales in his study with the Hong Kong Chinese population. In completing the OHS, participants responded by indicating their judgement whether each of the 18 statements was descriptive of them using a five-point scale ranging from 1 (*least like me*) to 5 (*most like me*).

Satisfaction with Life Scale (SWLS)

The five-item SWLS (Diener, Emmons, Larsen, & Griffin, 1985) assesses general life satisfaction as the cognitive aspect of subjective well-being. It reveals the individual's own judgement of his or her quality of life (e.g. 'In most ways, my life is close to my ideal'). The scale has demonstrated high internal consistency (Cronbach's $\alpha = .87$), excellent two-month test-retest reliability ($r = .82$), and convergent and discriminant validity with other measures of subjective well-being, independent ratings of life satisfaction, self-esteem, clinical symptoms, neuroticism and emotionality (Diener et al., 1985; Lucas, Diener, & Suh, 1996; Pavot & Diener, 1993). In completing the scale, participants were requested to indicate their judgement as to whether each of the five statements was descriptive of them using a five-point scale ranging from 1 (*least like me*) to 5 (*most like me*). A total score can be obtained by summing the five-item responses, with higher scores reflecting more satisfaction with life. The SWLS has been reported to be a valid and reliable scale with the Chinese population (e.g. Chan, 2009; Shek, Chan, & Lee, 1997).

Positive and Negative Affect Schedule (PANAS)

The PANAS (Watson, Clark, & Tellegen, 1988) consists of two scales: one on positive affect and one on negative affect. Each scale contains 10 emotion adjectives which are rated to indicate the respondent's general perception of the amount of time spent experiencing each emotion. The two scales are reported to be highly internal consistent (Cronbach's α above .85), largely uncorrelated and stable at appropriate levels over a two-month time period (Watson et al., 1988). Relatively high reliability has also been reported with its use in the Chinese population (Chan, 2009). In completing the scales, participants were requested to make their judgements of experiencing the emotions in general on a five-point scale: 1 (*not at all*), 2 (*a little*), 3 (*moderately*), 4 (*quite a bit*) and 5 (*extremely*). A total score on positive affect and one on negative affect can be obtained by summing the ratings on the relevant items.

Gratitude Adjectives Checklist (GAC)

The GAC (McCullough et al., 2002) consists of three emotion adjectives (appreciative, grateful and thankful) which are rated to indicate the respondent's general perception of the amount of time spent experiencing each emotion. The scale was used as a mood measure in this study to examine participants' experience of the feelings of gratitude before and after the intervention. In completing the scale, participants were requested to make their judgements of experiencing the emotions, in general, in the past few weeks on a five-point scale: 1 (*not at all*), 2 (*a little*), 3 (*moderately*), 4 (*quite a bit*) and 5 (*extremely*). A total score can be obtained by summing the ratings on the three items.

All scales used in the study were administered online in a bilingual (English and Chinese) version where the original English items would appear together with the translated Chinese items. The Chinese translated versions were either available Chinese versions (the MBI, Chan & Hui, 1995; the PANAS, Chan, 2009; and the SWLS, Shek, Chan, & Lee, 1997) or were translated versions for this study (the GQ-6, the GAC and the OHS). Chinese translation of the GQ-6, the GAC and the OHS was done by a language teacher, and the Chinese versions were then back-translated into English by another language teacher. Any discrepancies were resolved through discussion between the two language teachers to ensure that the original meanings of the English items were retained in the Chinese translation.

Procedure

Participants of this study were informed that the research was an eight-week self-improvement project on self-reflection for enhanced self-awareness. They were invited to attend a session on briefing of what they were to do during the eight weeks as described below under gratitude intervention. They were given a username and a password to access the webpage through which they would submit information online about what they did in the eight weeks, and respond to a pre-project baseline assessment questionnaire and a post-project outcome assessment questionnaire. Each participant would identify himself or herself by a self-generated code so that anonymity was maintained throughout the project.

Gratitude intervention

Participants were asked to keep a weekly log of three good things that happened to them during the week, and record them using a count-your-blessings form. They were then asked to reflect on these good things using three Naikan-meditation-like questions (see Krech, 2001). Specifically, they were given the following instructions, which were explained in the briefing:

There are many things, both large and small, that happen to you every week. At the end of each week, think back over the past week and write down up to three things you are grateful or thankful for. Set aside at least 15 minutes at the end of the week to think about why these good things happen to you. Specifically, reflect on each of the three good things by asking yourself three questions. What did I receive? What did I give? What more could I do? Stay with the feeling of appreciation and gratitude.

The summary information submitted by participants online was intended only for monitoring the intervention and was not used as data for analysis.

Pre-intervention baseline assessment questionnaire

Prior to the eight-week project, participants were requested to respond online to this questionnaire. The questionnaire included questions on simple demographic information such as gender, age and years of teaching experience, and scales for baseline assessment. These scales were the GQ-6, the OHS, the MBI, the SWLS, the PANAS and the GAC.

Post-intervention outcome assessment questionnaire

At the end of the eight-week project, participants were requested to respond online to this questionnaire. The questionnaire included questions asking participants about possible thematic organisation of good things happening to them and about their open comments on problems in self-reflection, and two outcome assessment scales on subjective well-being, the SWLS and the PANAS. The GAC was also included to check whether the intervention was successful in raising the level of gratitude feelings that might lead to enhanced well-being among participants.

Results***Gratitude, orientations to happiness and burnout***

To examine gratitude and its correlates (orientation to happiness and teacher burnout), participants' responses to the pre-intervention assessment measures, the GQ-6, the OHS and the MBI, were scored to yield a score on gratitude, three scores on the orientations to happiness and three scores on teacher burnout. Table 1 shows the means and standard deviations, and measures of internal consistency of these scales, together with their intercorrelations. It can be seen that the coefficients alpha as indices of internal consistency of these scales were of moderate values, ranging from .62 to .87, as would be expected from scales with a small number of items.

Gratitude was found to correlate substantially with Life of Meaning and the three components of teacher burnout. These correlations were all statistically significant or approached significance (for the correlation with Emotional Exhaustion, $p = .059$), suggesting that the more grateful the person, the more likely the person would value meaning in life and experience the sense of accomplishment, and the less likely the person would feel emotionally drained and depersonalised. These substantial correlations did not seem to have anything to do with demographic variables (not shown in Table 1), as gratitude correlated non-significantly with gender ($r = .13$), age ($r = .20$, based on 95 participants) and years of teaching experience ($r = .19$, based on 88 participants). On the basis of these low correlations, and because of the small sample size and missing data on demographic variables, it was deemed appropriate not to include or control these demographic variables in this and subsequent analyses.

It can also be seen from Table 1 that the three orientations to happiness correlated substantially and significantly with each other, with the exception of the correlation between Life of Meaning and Life of Pleasure, suggesting that the two could be relatively independent. The three components of burnout also correlated substantially with each other, and all correlations either achieved statistical significance or approached conventional statistical significance ($p = .057$; for the correlation between Emotional Exhaustion and Personal Accomplishment). Between orientations to happiness and components of burnout, the substantial and significant correlations

Table 1. Means, standard deviations and internal consistency of measures of gratitude, orientations to happiness and burnout ($N = 96$).

	<i>M</i>	<i>SD</i>	Cronbach's α	Orientations to happiness			Burnout		
				GRAT LM	LP	LE	EE	DP	PA
Gratitude (6)	25.00	3.57	.80						
Orientations to happiness									
Life of Meaning (6)	21.81	3.17	.69	.28**					
Life of Pleasure (6)	19.59	3.85	.78	.07	.17				
Life of Engagement (6)	19.10	3.22	.70	.05	.51***	.31**			
Burnout									
Emotional Exhaustion (9)	18.02	9.17	.87	-.19	-.01	-.06	-.24*		
Depersonalisation (5)	3.77	3.07	.62	-.26**	.10	.09	-.09	.61***	
Personal Accomplishment (8)	35.60	5.86	.75	.25*	.18	.06	.26*	-.20	-.36***

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

Notes: Gratitude (GRAT), Life of Meaning (LM), Life of Pleasure (LP) and Life of Engagement (LE) are scored in the range of 6–30. Emotional Exhaustion (EE) is scored in the range of 0–54. Depersonalisation (DP) is scored in the range of 0–30. Personal Accomplishment (PA) is scored in the range of 0–48. Cronbach's α is the internal consistency measure. The number in parentheses after the scale name indicates the number of items in the scale.

were those of Life of Engagement with Emotional Exhaustion and with Personal Accomplishment.

Comparing low- and high-gratitude groups on orientations to happiness and burnout

To examine more closely the influence of gratitude on orientations to happiness and burnout, two separate multivariate analyses of variance (MANOVA) were conducted. In these analyses, the three OHS scores and the three MBI scores were used as the two sets of dependent variables, and the GQ-6 score (median split, 25 or below vs. 26 or above) was used as the grouping variable to define a low-gratitude group and a high-gratitude group. Regarding orientations to happiness, the results indicated that the overall gratitude group main effect was significant, Wilks' $\lambda = .905$, $F(3, 92) = 3.21$, $p < .05$, partial $\eta^2 = .095$. Subsequent t -test for independent groups on each of the OHS scores was conducted as a follow-up test to the significant MANOVA gratitude group main effect. Using the Bonferroni procedure to adjust for multiple tests, each t -value was evaluated at the value of $.05/3$ or $.0167$. The results as summarised in Table 2 indicated that the high-gratitude group scored significantly higher than the low-gratitude group only on the measure of the Life of Meaning, with a medium effect size. Regarding teacher burnout, the results indicated that the overall gratitude group main effect was significant, Wilks' $\lambda = .880$, $F(3, 92) = 4.18$, $p < .01$, partial $\eta^2 = .120$. Subsequent t -test for independent groups on each of the MBI scores was conducted as a follow-up test to the significant MANOVA gratitude group main effect. Using the Bonferroni procedure to adjust for multiple tests, each t -value was evaluated at the value of $.05/3$ or $.0167$. The results indicated that the high-gratitude group scored significantly lower than the low-gratitude group on the measures of Emotional Exhaustion and Depersonalisation, with a medium effect size, and the

Table 2. Comparison between low-gratitude and high-gratitude groups on measures of orientations to happiness and burnout.

	Low gratitude (<i>n</i> = 49)		High gratitude (<i>n</i> = 47)				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i> (94)	<i>d</i>	<i>z</i>
Orientations to happiness							
Life of Meaning (6)	20.96	3.29	22.70	2.81	−2.79*	−.570	−3.01*
Life of Pleasure (6)	19.43	3.29	19.77	4.39	−0.43	−.088	−0.48
Life of Engagement (6)	19.02	3.43	19.19	3.02	−0.26	−.053	−0.04
Burnout							
Emotional Exhaustion (9)	20.51	8.39	15.43	9.31	2.81*	.574	−3.09*
Depersonalisation (5)	4.73	3.22	2.77	2.57	3.30**	.674	−3.20**
Personal Accomplishment (8)	34.57	5.74	36.68	5.84	−1.78	−.363	−1.73

* $p < .01$; ** $p < .001$.

Notes: Median-split on gratitude score defines low-gratitude group (score 25 or below) and high-gratitude group (score 26 or above). Life of Meaning, Life of Pleasure and Life of Engagement are scored in the range of 6–30. Emotional Exhaustion is scored in the range of 0–54. Depersonalisation is scored in the range of 0–30. Personal Accomplishment is scored in the range of 0–48. d is the effect size statistic. The z approximation value is from Mann–Whitney U -test with corrections for ties. The number in parentheses after the scale name indicates the number of items in the scale.

high-gratitude group scored substantially (though not significantly) higher than the low-gratitude group on Personal Accomplishment with a small effect size. A similar pattern of results was obtained with mean rank comparison of the two groups using the non-parametric Mann–Whitney *U*-test. These results are also summarised in Table 2.

Evaluating the effect of gratitude intervention on teachers' subjective well-being

In evaluating the effect of the eight-week count-your-blessings intervention, three separate repeated measures analyses of variance (ANOVA) were conducted to evaluate whether there were significant differences between the two assessments or the intervention effect on the three dependent measures of satisfaction with life, positive affect and negative affect as assessed by the SWLS and the ratings on the positive adjectives and the negative adjectives of the PANAS, respectively. This set of analyses was based on 89 teachers who completed both assessments. Since gratitude or dispositional gratitude as assessed by GQ-6 was found to have an effect on orientations to happiness and teacher burnout, and correlated substantially with subjective well-being measures on satisfaction with life ($r = .39, p < .001$), positive affect ($r = .19, p = .067$) and negative affect ($r = -.30, p < .01$), it was deemed appropriate to test gratitude group as a between-group factor in the three repeated measures ANOVAs.

Regarding the dependent measure of SWLS, the results indicated that the within-subjects intervention main effect was significant, Wilks' $\lambda = .906, F(1, 87) = 9.00, p < .005$, partial $\eta^2 = .094$, so was the intervention/gratitude group interaction effect, Wilks' $\lambda = .951, F(1, 87) = 4.51, p < .05$, partial $\eta^2 = .049$. The between-subjects gratitude group main effect was also significant, $F(1, 87) = 6.99, p < .01$, partial $\eta^2 = .074$. Since the interaction effect was significant, it was appropriate to follow up with paired *t*-tests to explore the differences between the two assessments within each of the gratitude groups. The results indicated that there were significant differences between the two assessments only for the low-gratitude group, $t(46) = -3.52, p < .001$, with a medium effect size, $d = -.513$. These results are summarised in Table 3.

Regarding the dependent measure of positive affect, the results indicated that only the within-subjects intervention main effect was significant, Wilks' $\lambda = .846, F(1, 87) = 15.80, p < .001$, partial $\eta^2 = .154$, and the intervention/gratitude group interaction as well as the between-subjects gratitude group main effect were all non-significant, suggesting that participants reported experiencing more positive affect after the intervention irrespective of whether they were in the low- or high-gratitude groups. Regarding the dependent measure of negative affect, the results indicated that the intervention main effect, the intervention/gratitude group interaction effect and the gratitude main effect were all non-significant, suggesting that participants did not report significant changes in the experience of negative affect after the intervention. Although no special follow-up tests need to be conducted for these two dependent measures, the same analytic procedures for the SWLS were followed and summarised in Table 3 for comparison.

As a supplementary check on whether the eight-week intervention was effective in raising the level of gratitude feelings, the GAC score was used as the mood measure and the differences between the pre- and post-intervention assessments were evaluated by comparing the mean scores. While there was an observed increase in mean ratings from 12.20 (SD = 1.90) to 12.65 (SD = 1.92), the difference as evaluated by

Table 3. Comparison between pre-intervention assessment and post-intervention assessment on measures of subjective well-being.

	Cronbach's α	Pre-intervention assessment		Post-intervention assessment		t	d	z
		M	SD	M	SD			
Satisfaction with Life (5)	.85							
Low-gratitude group ($n = 47$)		15.34	2.96	16.87	3.41	-3.52***	-.513	-3.27***
High-gratitude group ($n = 42$)	.77	17.57	3.15	17.83	3.16	-0.65	-.100	-0.52
Positive Affect (10)								
Low-gratitude group ($n = 47$)	.87	34.30	4.88	36.36	4.41	-3.33**	-.486	-3.01**
High-gratitude group ($n = 42$)		35.31	3.87	36.98	5.01	-2.53*	-.390	-2.25*
Negative Affect (10)	.87							
Low-gratitude group ($n = 47$)		24.85	7.18	24.23	6.74	0.69	.101	-0.73
High-gratitude group ($n = 42$)	.87	23.45	5.96	24.07	7.66	-0.68	-.105	-0.39
Gratitude Adjectives Checklist (3)								
Low-gratitude group ($n = 47$)		11.11	1.67	12.21	1.79	-3.15**	-.459	-2.90**
High-gratitude group ($n = 42$)		13.43	1.31	13.14	1.96	0.83	.128	-0.43

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

Notes: Median-split on gratitude score defines low-gratitude group (score 25 or below) and high-gratitude group (score 26 or above). Satisfaction with Life is scored in the range of 5–25. Positive Affect and Negative Affect are scored in the range of 10–50. Gratitude Adjectives Checklist is scored in the range of 3–15. Cronbach's α is the internal consistency measure computed on the basis of the total sample of 96 participants in pre-intervention assessment. d is the effect size statistic. The z approximation value is from Wilcoxon signed-ranks test with corrections for ties. The number in parentheses after the scale name indicates the number of items in the scale.

paired *t*-test only approached significance, $t(88) = -1.75, p = .083$. To examine the change in gratitude feelings in grateful and less grateful participants, the analyses for the two outcome measures were repeated for the GAC measure. The repeated measures ANOVA results indicated that the within-subjects intervention main effect was non-significant, Wilks' $\Lambda = .969, F(1, 87) = 2.75, p = .101$, partial $\eta^2 = .031$, but the intervention/gratitude group interaction effects were significant, Wilks' $\Lambda = .917, F(1, 87) = 7.91, p < .01$, partial $\eta^2 = .083$. The between-subjects gratitude group main effect was also significant, $F(1, 87) = 38.19, p < .001$, partial $\eta^2 = .305$. With significant interaction effect, follow-up paired *t*-tests to explore the differences between the two assessments were conducted within each of the gratitude groups. The results, also shown in Table 3, indicated that there were significant differences between the two assessments only for the low-gratitude group, suggesting that the count-your-blessings intervention was more effective in raising the level of gratitude feelings for the less grateful participants.

Again, supplementary analyses testing the effect of intervention separately for high- and low-gratitude groups were conducted using mean rank comparisons by the non-parametric Wilcoxon signed-ranks test. The analyses have yielded a similar pattern of results as summarised in Table 3.

Discussion

The present study investigated gratitude at two levels: the trait or disposition level and the state or emotion level. At the disposition level, findings in this study highlighted that teachers' gratitude was positively associated with the eudaimonic or meaningful life orientation to happiness and Personal Accomplishment (the positive component of teacher burnout), and negatively associated with Emotional Exhaustion and Depersonalisation (the negative components of teacher burnout). Specifically, when more grateful teachers were compared with less grateful teachers, the more grateful teachers viewed meaning as more important for happiness, and were less emotionally exhausted and felt less depersonalised but had a greater sense of achievement than did less grateful teachers. Thus, it seems that a teacher's dispositional gratitude not only is associated with a eudaimonic life orientation, which in turn has been reported to be associated with greater life satisfaction (see Chan, 2009), but could act as a protective factor against teacher burnout. Consequently, it might be conjectured that the promotion of the pursuit of a meaningful life would go nicely together with the promotion of gratitude, which might be helpful for combating teacher burnout.

However, it has to be noted that while the correlations between gratitude and orientations to happiness and between gratitude and burnout were statistically significant, they were generally of low magnitude, suggesting that dispositional gratitude might not be the best predictor of orientations to happiness and burnout. Thus, it might be of interest to explore in future studies possible variables that could moderate or mediate the influence of gratitude on orientations to happiness and burnout.

At the state or emotion level, the findings that the feelings of gratitude could be induced or enhanced through engaging in an eight-week count-your-blessings exercise suggested that gratitude interventions could be designed or developed to help teachers combat burnout and promote their well-being. Consistent with past findings in non-Chinese settings (e.g. Seligman et al., 2005, 2006), findings in this study also provided support for the effectiveness of the count-your-blessings exercise in enhancing subjective well-being in the specific population of Hong Kong teachers in the

Chinese cultural setting. Specifically, the gratitude intervention in this study involves not only asking teachers to reflect on reasons for good things happening to them but also to meditate with three Naikan-like questions that are very much in line with the Confucian teaching of 'daily self-reflection on three things' (*wu ri sanxing wushen*) in the *Analects* (Wu, 2003). It is believed that meditation or self-reflection with the three questions could foster the recognition of human interdependence, leading to the realisation of how much we have received from others, how much gratitude is due them and how little we have demonstrated this gratitude. Indeed, this weekly gratitude-enhancing exercise has brought about an overall increase in feelings of appreciation, thankfulness and gratefulness in the intervention-end assessment. However, the increase was largely due to the increase for teachers who scored in the low-gratitude group. Thus, the effect of the intervention seemed to be more salient for teachers who were less grateful in disposition. This differential effect also applied to the outcome measures on teachers' satisfaction with life and their experience of positive affect.

It was plausible that for the high-gratitude group of teachers who were already very grateful, it would be hard to induce further increment on their feelings of gratitude. However, it was somewhat puzzling that there was an observed decrease in the gratitude feelings at intervention-end assessment for this high-gratitude group. Perhaps, the enhancement of the feelings of gratitude has also induced heightened feelings of indebtedness, which might be more negative, as reflected in the similar increase in the outcome measure of negative affect (see, e.g., Watkins, Scheer, Ovnicek, & Kolts, 2006). This conjecture about the possible elicitation of the feelings of indebtedness together with the feelings of gratitude in the present intervention exercise needs to be further investigated in future studies.

Perhaps, with the possibly differential effectiveness of gratitude intervention exercise like the one in the present study for grateful and less grateful participants, researchers might need to develop different intervention programmes or strategies to cater to participants of different levels of dispositional gratitude. For example, high self-focused attention has been found to be associated with indebtedness (see Mathews & Green, 2009), suggesting that self-reflection or meditation through asking oneself the Naikan-like questions as in the intervention of the present study might not be well-suited to high-gratitude group of participants. Nonetheless, the development of more effective gratitude intervention programmes or exercises for individuals with different levels of dispositional gratitude warrants future investigations.

This study certainly had many limitations, and caution must be exercised in the interpretation of the results of this study. One obvious and major limitation was the lack of a proper control group in the pre-test–post-test evaluation of the effectiveness of the gratitude intervention. Arguably, the changes in outcome measures could be a result of repeated testing or other factors rather than the effect of intervention, and these factors could not be ruled out because of the lack of a comparison group. However, the increase in the feelings of gratitude, the increase in satisfaction with life, the increase in the experience of positive affect and the decrease in the experience of negative affect did seem to be real and could not be readily attributable to practice effect. Thus, despite the limitation, this study did provide some suggestive evidence that the present gratitude intervention was effective in eliciting or enhancing feelings of gratitude that led to enhanced subjective well-being.

Another major limitation of this study had to do with the structuring and monitoring of the intervention. Specifically, there was no close monitoring of the intervention,

and participants would initiate their reporting online via Internet about how they had performed the intervention task of counting their blessings and self-reflection. Thus, one would expect that there could be wide differences as to the degree of adhering to the instruction that was delivered in the briefing prior to the intervention. However, despite this limitation, the intervention seemed to work, given that participants were motivated to gain self-improvement through performing the required task in the eight weeks of the intervention.

Finally, another major limitation could be the sample selection of the study. Admittedly, the convenient sample of a small number of Chinese teachers recruited via enrolment in courses in the university teacher education graduate programme could hardly be claimed to be representative of Chinese teachers in Hong Kong. In addition, the gender ratio that suggested an over-representation of female teachers in the sample would make generalisation difficult, but it also reflected the reality that there are generally more female teachers in the teaching profession in Hong Kong. Thus, cross-replication with larger and more representative samples should be helpful in establishing the generalisability of the present findings, and might provide further insight into the evaluation of gratitude intervention programmes to promote subjective well-being among teachers.

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