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Nice Thinking! An Educational Intervention That Teaches Children to Think Gratefully

Abstract

Gratitude is essential to social life and well-being. Though research with youth populations has gained momentum recently, only two gratitude interventions have been conducted in youth, targeting mostly adolescents. In the current research, we tested a new intervention for promoting gratitude among the youngest children targeted to date. Elementary school classrooms (of 8-11 year olds) were randomly assigned to either an intervention that educated children about the appraisal of benefit exchanges or to a control condition. We found that children's awareness of the social cognitive appraisals of beneficial social exchanges (i.e., grateful thinking) can be strengthened and that this, in turn, makes children more grateful and benefits their well-being in terms of increased general positive affect. A daily intervention produced evidence that this new approach induced gratitude immediately (2 days later) and lead children to express gratitude more behaviorally (i.e., wrote 80% more thank you cards to their Parent Teacher Association). A weekly intervention induced gratitude up to five months later and additionally showed an effect on well-being (i.e., positive affect). Evidence thus supported the effectiveness of this intervention. Results are discussed in terms of implications for positive youth development and academic functioning.

Keywords: gratitude; intervention; children; well-being; positive psychology.

Nice Thinking! An Educational Intervention That Teaches Children to Think Gratefully

Offering and receiving help are fundamental to healthy development and thriving. The fact that children become involved in beneficial social exchanges even before they are able to understand or fully appreciate them underscores the importance of altruism and cooperation for social development. Traditionally, gratitude has been considered a central emotion for altruism and cooperation in human society (A. Smith, 1790/1976) because it enables people to notice, understand, and capitalize off beneficial exchanges with others (McCullough, Kimeldorf, & Cohen, 2008). Indeed, individual differences in experiencing gratitude are uniquely related to well-being (Wood, Joseph, & Maltby, 2009), the development of positive relationships (Algoe, Haidt, & Gable, 2008; Froh, Bono, & Emmons, 2010), greater appreciation of social resources (McCullough, Emmons, & Tsang, 2002), and more use of social support coping (Wood, Joseph, & Linley, 2007). Thus, gratitude is essential to relationships, social life, and well-being (Wood, Froh, & Geraghty, 2010) and promoting it in youth may support social development.

But can children be taught to think gratefully? And if so, does sensitizing children to the nuances of beneficial social exchanges help instill feelings of gratitude in them? These are the main questions addressed by this study. If children can be taught to experience gratitude early on, as soon as it is possible developmentally, then this may promote positive social development and help bring about many successful outcomes throughout their lives. This study examines whether a new gratitude intervention that targets appraisals of beneficial social exchanges is an efficacious way to increase gratitude and well-being in children around the time of middle childhood, when gratitude is thought to solidify (Emmons & Shelton, 2002; Graham, 1988).

Theoretical Framework

Research suggests that specific cognitions cause gratitude, and we targeted these in this study. People feel grateful when they acknowledge receiving an intentional act of kindness from a benefactor (Buck, 2004; Heider, 1958; Weiner, Russell, & Lerman, 1979). Specifically, they experience gratitude in response to benefits that they perceive as (a) valuable to them, (b) were provided intentionally and altruistically (rather than for ulterior motives), and (c) were costly to the benefactor (Tesser, Gatewood, & Driver, 1968; Wood, Maltby, Stewart, Linley & Joseph, 2008). Finding that individual differences in these three dimensions could explain why people higher in trait gratitude experience grateful affect in response to receiving prosocial acts, Wood et al. (2008) suggested that changing them may help increase the frequency and intensity with which people experience gratitude and its concomitant social and well-being benefits. This notion is consistent with the cognitive therapy approach of changing automatic thoughts to increase desirable therapeutic outcomes and well-being (Beck, 1976). Thus, we hypothesize that strengthening these cognitions will lead to increases in gratitude as well as theoretically-expected changes in behavior (i.e., thanking or reciprocation of prosocial behavior) and emotional well-being (see Figure 1). We provide the first test of an intervention using this approach, in children ages 8-11.

Psychology of Gratitude in Youth

Increasing gratitude during middle childhood may especially be advantageous as this is when children make rapid advances in having mutually beneficial interactions with others and in forming supportive social relationships (Wentzel, Barry, & Caldwell, 2004). Gratitude is important in social life because it supports exchange-based relationships but also communal relationships, strengthening ties to responsive interaction partners (Algoe, 2012).

Except for isolated studies that preceded current knowledge (e.g., Baumgarten-Tramer, 1938), research on youth gratitude is in its infancy. But evidence so far shows that many of the social and psychological benefits found with adults occur with youth too (for a review see Bono, Froh, & Forrett, in press). For instance, adolescents ages 11-13 who were more grateful also reported giving more emotional support and experiencing more positive affect, social support from peer and family, optimism, and satisfaction across many life domains (school, family, friends, community, and self), compared to less grateful adolescents (Froh, Yurkewicz, & Kashdan, 2009). And adolescents ages 14-19 who were more grateful not only reported greater life satisfaction, academic achievement, absorption in activities, and social integration (or using one's strengths to help others and society), but also less envy, depression, and materialism (Froh, Emmons, Card, Bono, & Wilson, 2011). Many of these associations are supported longitudinally too, showing links to improved psychological and social functioning 6 months (Froh et al., 2010) and 4 years later (Bono, Froh, & Emmons, 2012).

Life satisfaction, well-being, and strong social ties are critical for youths' adjustment, bonding to school, and achievement (Huebner, Suldo, & Gilman, 2006). Thus, teaching children how to be more grateful supports the primary goals of school psychologists, teachers and other professionals who work with youth.

Interventions to Increase Gratitude in Youth

Only two interventions have been conducted with youth. In one study, children (ages 8-19) from a parochial school were randomly assigned to a control condition or a "gratitude visit" condition (Froh, Kashdan, Ozimkowski, & Miller, 2009). That is, they wrote about mundane daily experiences or they wrote and then read a thank you letter to a person they needed to thank. Findings indicated that youth in the gratitude condition who were also low in positive affect

reported more gratitude and positive affect at post-treatment and more positive affect at the two-month follow-up, compared with youth in the control condition.

In another intervention study, Froh, Sefick, and Emmons (2008) randomly assigned 11 classrooms of 6th and 7th graders (ages 11-14) to one of three conditions—gratitude, hassles, or a control (similar to the one above). Students in the gratitude condition listed 5 things for which they were grateful, and those in the hassles condition listed 5 things that irritated them. The intervention ran daily for 2 weeks and data were collected immediately at posttest and again 3 weeks later. Results showed that listing blessings lead to more optimism, life satisfaction, and less negative affect, compared to listing hassles. Moreover, students who reported feeling grateful for having received aid in school reported more positive affect at posttest, a pattern that was stronger 3 weeks later. Gratitude for aid received mediated the relationship between the intervention and general gratitude. Finally, students who listed blessings reported more school satisfaction at posttest and at the 3-week follow-up, compared to students in the hassles or control group.

This last finding is significant because dissatisfaction with school is a problem for many middle and high school students (Huebner, Valois, Paxton, & Drane, 2005), and school satisfaction is related to academic and social success (Verkuyten & Thijs, 2002). Therefore, it appears that acknowledging benefits, like receiving help from others, is an effective way to promote gratitude in adolescents. Gratitude, in turn, may help counter negative appraisals of the academic experience (i.e., school satisfaction) and perhaps thereby improve students' school bonding and social adjustment.

Gratitude interventions for youth that operate through directly changing cognitions about the social exchange of benefits may be more effective than simply listing blessings because they

impart social skills that can be immediately applied to social life. This may be especially helpful with younger children whose cognitive abilities and social skills are still maturing.

Study 1: Intervention Using a Daily Benefit-Appraisal Curriculum

In the first study we piloted structured lesson plans intended to educate students about the social cognitive appraisals involved in circumstances of receiving benefits from others. The intervention was delivered daily for one week. The benefit-appraisal curriculum was compared to an attention-control curriculum in which students focused on mundane social activities that were emotionally-neutral. A quasi-experimental design was used whereby classrooms were randomly assigned to one condition or the other. The treatment and control conditions were kept comparable in terms of the tasks and structure of the information sessions and quantity and quality of attention from interventionists; they differed only in terms of the content of the information sessions.

Dependent measures of benefit appraisals and gratitude were collected 2 days before the intervention and 2 days after the intervention concluded. A behavioral measure of gratitude (i.e., writing thank you cards) was also obtained at post-test. We hypothesized that the intervention would increase students' benefit appraisals, levels of gratitude, and thanking behavior.

Method

Participants

This convenience sample included 122 elementary school students (mean age = 9.03 years, *SD* = 0.33, range = 8 – 10 years) in six classes. Cohen (1992) suggests that with alpha set at .05, and assuming a medium effect size, we would need 64 students in each condition (N = 128). Students were in fourth grade within an affluent district (district median household income for a four-person family= $115,440, state median household income for a four-person family =

$83,036). Most were Caucasian (68%) and about half were male (48.4%). Per the New York State Report card website for the year we collected data, 94% of 4th grade students (same grade as those who participated in our study) demonstrated an "understanding" or a "thorough understanding" of the content for the English Language Arts state exam which is expected in the subject and grade level (https://reportcards.nysed.gov/).

Curricula Administration

The curricula were implemented by three school psychology graduate students (interns) who were interested in gaining additional applied experience working with children in schools. The fifth author (KAH) trained the interns in both curricula by reviewing all curricula material with them until all questions were answered. KAH was available daily to meet with the interns during the intervention phase to answer any questions. The interns and teachers were kept blind to the study's purpose by being told that the study's purpose was to test the effectiveness of a social-emotional curriculum ("gratitude" was never mentioned during the training, conversations with teachers, or intervention). Using stratified random assignment, each intern was randomly assigned to one classroom in the benefit-appraisal condition, and one classroom in the attention-control condition. A coin toss was used to decide which intern went with which classroom.

Numbers of students assigned to the treatment condition (n = 62) and control condition (n = 60) were comparable, as was instruction time (i.e., 30 minutes daily for one week, Monday-Friday). Participants received raffle tickets for doing the homework activities, and after the intervention one child from each classroom won a $10 gift certificate.

Treatment condition. Students in the treatment condition received instruction on the social-cognitive perceptions that elicit gratitude (i.e., benefit appraisals). Structured lesson plans adhered to the following outline: the introduction (session 1); understanding a benefactor's

intention behind helping a beneficiary (session 2); understanding the cost experienced by benefactors when giving a benefit (session 3); understanding the benefits of receiving a gift bestowed by a benefactor (session 4); and the review/summary, which incorporates all components of the previous sessions (session 5). The lessons included classroom discussions, writing assignments, and role playing activities.

Attention-control condition. Students in the attention-control condition also received similarly structured lesson plans. However, the content of the lessons focused on emotionally-neutral topics, such as daily student activities. See the Appendix for a comparison of these two curricula.

Measures

Benefit appraisal vignettes (i.e., grateful thinking). Three vignettes were created to measure the social-cognitive perceptions underlying gratitude (i.e., intent, cost, and benefit; Tesser et al., 1968; Wood et al., 2008). The vignettes depicted three different helping situations in which students imagine themselves as the main character in the stories. Following each story, students were asked to respond to four questions. Questions for each vignette were tailored to the respective benefactor (i.e., sister, friend, and parent) and situation (i.e., help studying, lending cleats to play soccer, and sharing a computer); all three appraisal dimensions were assessed in each vignette Using "sister" as an example, the questions were the following: "How much did your sister help you on purpose?" (intent; response options ranged from (1) *not at all on purpose* to (5) *totally on purpose*); "How much did your sister give up to help you?" (cost; response options ranged from (1) *gave up nothing* to (5) *gave up a great deal*); and "How much did your sister quizzing you help you?" (benefit; response options ranged from (1) *not at all helpful* to (5) *a great deal of help*). The last question for each vignette asked how thankful students would feel

toward the benefactor (gratitude; response options ranged from (1) *very slightly or not at all* to (5) *extremely*). When analyzed, this fourth item is examined separately for purposes of examining construct validity.

Following Wood et al.'s (2008) procedure, we summed the three items intending to measure the social-cognitive determinants of gratitude across the three vignettes to create a benefit appraisal composite comprised of nine items which reflects the total score on intent, cost, and benefit. Confirmatory factor analyses (CFA) were conducted to examine the construct validity of this measure. At both pre-intervention and post-intervention points, CFAs yielded perfect model fits, which was not surprising, because these models were saturated. More importantly, factor loadings were large and significant. At pre-intervention, standardized factor loadings ranged between .55 and .72; and at post-intervention, standardized factor loadings ranged between .60 and .84. In this sample, alpha for the 9-item benefit appraisal composite was .80 (pretest) and .83 (posttest).

Initial pilot testing affirmed the psychometric properties of the benefit appraisal composite. Specifically, 39 students (mean age 10.38 years, SD = 0.91, range = 9-12 years) completed the vignettes as well as the Gratitude Adjective Checklist (McCullough et al., 2002). The 9-item benefit appraisal showed good internal consistency ($\alpha = .86$). Support for construct validity was provided by strong correlations with (a) a mean score on the three gratitude items from the vignettes (i.e., "How thankful would you feel?"), $r = .74$, $p < .001$, and (b) GAC scores, $r = .47$, $p = .004$. These findings indicate that the benefit appraisal composite is related to grateful thinking toward a benefactor and overall gratitude.

Grateful mood. The Gratitude Adjective Checklist (GAC; McCullough et al., 2002) asks people to rate how grateful, thankful, and appreciative they are on a scale from 1 (*very slightly or*

not at all) to 5 (*extremely*). To measure gratitude as a mood, participants rated the amount they experienced each of these 3 emotions "during the past few weeks" (cf. Froh, Yurkewicz, & Kashdan, 2009). In the current sample, the GAC showed sufficient internal consistency (alpha = .70 at pretest and .74 at posttest), levels comparable to that of the pilot sample of 9-12 year olds (alpha = .77). The GAC has been used to assess gratitude as a trait, mood, or emotion, depending on the timeframe in the directions (Froh, Miller, & Snyder, 2007). It shows good internal consistency (αs = .78-.88; Froh et al., 2008) and construct validity with adolescent samples, yielding low to moderate positive correlations with optimism (r = .35), contentment (r = .21), life satisfaction (r = .37), and stronger correlations with positive affect (r = .63; Froh, Yurkewicz, & Kashdan, 2009). Though other dispositional measures of gratitude exist for older populations (e.g., the Gratitude Questionnaire-6; McCullough et al., 2002), the GAC was used for this study because when it was being conducted this was the only validated gratitude scale for children (see Froh et al., 2007 for a review). The GAC and GQ-6 have since been found to be correlated at .58 for 10-11 year olds (Froh, Fan, Emmons, Bono, Huebner, & Watkins, 2011).

Behavioral measure of gratitude. On the Monday following the intervention phase, the Parent Teacher Association (PTA) provided a multi-media presentation to the entire student body in the afternoon (thus both conditions were exposed to the presentation at the same time). The teachers involved in the current study gave students the opportunity to make a thank you card for the PTA by giving the following instructions in their classrooms after the presentation:

> The presentation you just saw was given by our Parent Teacher Association. We have about 5 minutes of free time. You can use this time to write a "thank you" card to the PTA using the paper provided or you can just hang out. Some people like to say "thanks" by writing something or drawing a picture. So if you choose to write a thank you card,

feel free to either write a letter or draw a picture and print your first and last name at the bottom so they know who the card is coming from. I'll then pass them on to the PTA. Thus, the chance to write thank you notes was presented as independent from the curricula and completely voluntary. After the activity, teachers collected thank you cards and identified the participating students on the class roster. Teachers then gave the cards to the school psychologist to mail to the PTA. Participants only completed this task at post-test because of potential reactivity effects (Shadish, Cook, & Campbell, 2002). Students who wrote thank you cards reported more grateful mood (M = 12.10) at post-test than students who did not (M = 11.16), t = 1.65, p = .05, d = .32, indicating construct validity for this behavioral measure.

Procedure

After receiving approval from the first author's IRB, and the school district's superintendent and administration, parental consent forms were mailed to students' homes and children returned them to their teachers. Children completed assent forms in their classroom. The participation rate was 88%, and students who did not participate in the study read at their desks while the curricula were administered.

Data were collected in the student's classrooms. Pretest data were collected the Friday before the week of the intervention phase. Posttest data were collected the Monday after the intervention phase (in the morning) so the affect ratings covered the intervention week.

To determine treatment integrity, the interns who implemented the curricula answered questions that targeted the goals and objectives of each lesson. For example, "Did you complete the 'Talk About It' activity?" was answered, "Yes" or "No." The successful completion of the outlined goals and objectives of each lesson for the curricula was 100%, suggesting that lessons were administered as intended.

Results

Effectiveness of the Treatment

To evaluate if the intervention was effective in strengthening students' benefit appraisals (i.e., grateful thinking), we first computed means and standard deviations for each condition at pretest (treatment $M = 34.98$, $SD = 6.42$ vs. control condition $M = 35.63$, $SD = 8.03$) and posttest (treatment $M = 38.53$, $SD = 5.14$ vs. control condition $M = 36.75$, $SD = 8.16$). We then conducted an ANCOVA with condition as the independent variable, benefit appraisals at posttest as the dependent variable, and pretest benefit appraisals as the covariate. We used a one-tailed test because our hypothesis was directional and theory-driven. The treatment students reported significantly stronger benefit appraisals at posttest, compared to the control students, $F(1, 98) = 5.88$, $p < .05$, $\eta^2 = .06$. Thus, the intervention impacted participants' grateful thinking.

Next we analyzed if the intervention had an effect on students' levels of gratitude. We computed means and standard deviations for gratitude in each condition at pretest (treatment $M = 11.04$, $SD = 3.27$ vs. control condition $M = 10.65$, $SD = 3.44$) and posttest (treatment $M = 12.03$, $SD = 3.02$ vs. control condition $M = 10.86$, $SD = 3.14$). We then conducted an ANCOVA with condition as the independent variable, posttest gratitude as the dependent variable, and pretest gratitude as the covariate. We used a one-tailed test because our hypothesis was directional and theory-driven. The treatment students reported significantly more gratitude at posttest than the control students, $F(1, 95) = 4.25$, $p < .05$, $\eta^2 = .04$.

We then conducted a two-way contingency table analysis to evaluate whether students in the treatment condition wrote more thank you cards to be sent to the PTA compared to students in the control condition. The two variables were condition with two levels (treatment vs. control) and wrote thank you card with two levels (yes vs. no). Condition and the writing of a thank you

card were found to be significantly related, Pearson χ^2 (1, N = 122) = 4.65, $p < .05$, Cramer's V = .20. The percentage of students who wrote thank you cards was 43.5% (27 out of 62) for the treatment condition and 25.0% (15 out of 60) for the control condition.

The differences between the conditions were due to changes within the benefit-appraisal intervention over time. The averaged benefit appraisals and grateful mood ratings remained unchanged over time in the attention-control group.

Brief Discussion

The benefit-appraisal curriculum, carried out daily over a one week period, worked as intended. Students in the treatment condition reported increases in benefit-appraisals and grateful mood compared to students in the attention-control condition. Practically speaking, the small effect sizes obtained at posttest on benefit appraisals and grateful mood (Cohen's ds = .26 and .38, respectively) indicate that about 60% of the control group falls below the treatment group average in terms of appraising the exchange of benefits and that about 65% does in terms of grateful mood (see Coe, 2002). Further, students in the treatment condition wrote 80% more thank you cards to the PTA than students in the attention-control condition. Therefore, the changes observed as a function of the experimental manipulation extend beyond the realm of self-report and provide evidence that students who had received the training to better appreciate the prosocial intentions of others were much more likely to write thank you notes.

The results provide evidence that children's benefit appraisals can be strengthened and that doing so can increase their gratitude. That more students in the treatment condition wrote thank you cards than students in the attention-control condition provides external validation of the findings as well as a test of theoretical views that gratitude should lead to reciprocal kind acts (Bartlett & DeSteno, 2006). Importantly, this is the first evidence that any intervention (in

children or adults) that focused on increasing gratitude actually leads to behavioral changes. Differences in thanking behavior at baseline were not accounted for, however, limiting our ability to infer increases in this behavioral measure.

But, would the same intervention administered weekly and over a longer period of time give children more opportunity to apply the material to their lives and produce stronger impacts on gratitude and on subjective well-being? And, would this have lasting effects several months later? In Study 2 we piloted the intervention over five-weeks and collected several follow-ups to assess long-term effects in a different convenience sample, focusing more on well-being effects.

Study 2: Intervention Using a Weekly Benefit-Appraisal Curriculum

In the second study we compared the same treatment and control conditions that were used in Study 1. However, research suggests that gratitude interventions may be more effective if participants are given an opportunity to personally engage with the material (Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011). Therefore, our intervention in Study 2 differed from Study 1 in terms of delivery (weekly vs. every day) and duration (five weeks long vs. one week long). Our intention was to use a less intensive and more sustained approach to prevent rote repetition and give participants more time to personally apply the material. Otherwise, the same exact structured lesson plans and procedures were used. Thus, as before, a quasi-experimental design was employed in which classrooms were randomly assigned to the treatment or control condition.

Like Study 1, we measured student's benefit appraisals and gratitude. But in Study 2 we also included measures of positive and negative affect and overall life satisfaction. This time, dependent measures were collected over a span of 5 months rather than a span of just over a week. This delivery method and schedule was used to allow a more rigorous test of the

intervention's effectiveness in producing more sustained changes in individuals' grateful thinking, grateful mood, and subjective well-being over a longer period of time.

Method

Participants

Participants were 82 elementary school students (mean age = 9.50 years, *SD* = 0.63, range = 8-11 years) in four different classes. Cohen (1992) suggests that with alpha set at .05, and assuming a medium effect size, we would need 64 students in each condition. But given some unforeseen circumstances, we were unable to get that many students. Students were in Grades 4 (46.3%) and 5 (53.7%) within an affluent district (district median household income for a four-person family = $129,752; state median household income for a four-person family = $83,036). Most were Caucasian (80.5%), about half were male (54.9%), and 11.0% reported receiving free lunch. Per the New York State Report card website for the year we collected data, 95% of 4th grade students and 88% of 5th grade students (same grades as those who participated in our study) demonstrated an "understanding" or a "thorough understanding" of the content for the English Language Arts state exam which is expected in the subject and grade level (https://reportcards.nysed.gov/). These students were from a different school district then those in Study 1.

Measures

Benefit appraisal vignettes. The 9-item benefit appraisal composite demonstrated good reliability (alphas ranged .80 - .91). Regarding construct validity, CFAs at each time point again yielded perfect fits, because models tested were all saturated. Factor loadings were large and significant at each time point. Specifically, standardized factor loadings ranged from .60 to .70 at Time 1, from 0.60 to .90 at Time 2, from .60 to .85 at Time 3, from .60 to .88 at Time 4, and

from .75 to .94 at Time 5. The benefit appraisal composite was positively correlated with mean scores from the vignette gratitude items, r = .53 to .76 across the five time points, $p < .001$.

Grateful mood. The three emotion items of the GAC (McCullough et al., 2002) demonstrated good internal consistency reliability (alphas ranged .81 - .93).

The Positive and Negative Affect Scale for Children (PANAS-C). The PANAS-C (Laurent et al., 1999) was used to assess positive (PA) and negative affect (NA). It consists of 15 positive emotions (e.g., happy, cheerful) and 15 negative emotions (e.g., sad, frightened) rated on scales ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). Internal consistency is strong for both the PA scale (.90 for the scale development sample and .89 for the replication sample) and NA scale (.94 for the scale development sample and .92 for the replication sample; Laurent et al., 1999). Both scales also have good convergent and discriminant validity, with NA being positively correlated with childhood measures of depression and anxiety (*rs* = .60 and .68) and PA being inversely correlated with these measures (*rs* = -.42 and -.30, respectively; Laurent et al., 1999). Participants were asked to rate the amount they experienced each feeling "during the past few weeks." In this sample, alphas ranged .84 - .90 for PA and NA.

The Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS). The BMSLSS (Seligson, Huebner, & Valois, 2003) is a 5-item measure using a response scale ranging from 1 (*terrible*) to 7 (*delighted*) that assesses overall life satisfaction summed across multiple domains (family, friendships, school, self, and living environment). The scale is designed to assess general life satisfaction in children and youth (ages 8 -18). Internal consistency has been reported to be acceptable with middle school students (α = .75), and the scale has demonstrated a unidimensional factor structure that correlates significantly with the Students' Life Satisfaction Scale (r = .70) and other measures of well-being (Seligson, Huebner,

& Valois, 2005). A sample item from the BMSLSS is, "I would describe my satisfaction with my friends as _____." The 5 items were combined into a life satisfaction score. In this sample, alphas ranged from .65-.77.

Curricula Administration

The same benefit-appraisal and attention-control curricula used in Study 1 were administered to the participants in Study 2, except that they received the curricula weekly for five weeks. KAH trained the two school psychology interns (different graduate students from Study 1) from the school where the study took place in the two curricula the same way she did for the interns in Study 1. During the intervention phase, KAH met with the interns weekly as needed. The interns and teachers were kept blind to the study's purpose and hypotheses and told that classrooms would be assigned to one of two curricula: emotional (i.e., benefit appraisal) or social (i.e., attention controls); any mention of "gratitude" was absent from conversations. As in Study 1, we used self-report checklists to ensure that interns administered each condition as intended.

Four classrooms of students participated. Slightly more students were assigned to the benefit-appraisal curriculum (n = 44) than the attention-control curriculum (n = 38). There were almost identical numbers of students per grade in each condition (fourth grade: treatment condition = 21; attention-control condition = 17; fifth grade: treatment condition = 23; attention-control condition = 21). One intern was assigned to the fifth grade class in the benefit-appraisal condition and the fourth grade class in the attention-control condition; the other intern was assigned to the fifth grade class in the attention-control condition and the fourth grade class in the benefit-appraisal condition. A coin toss was used to decide which intern went with which classroom. Instruction time for both the benefit-appraisal and attention-control curricula was 30

minutes once a week for a total of five weeks. The same raffle procedure used in Study 1 was to encourage participation and homework completion.

Procedure

As in Study 1, permission was received from the IRB and school district, and procedures for consent and assent were identical. The participation rate was 84%. The fifth author (KAH) recruited all fourth and fifth grade teachers who were interested in participating. Students who did not participate in the research read at their desks while the curricula were being administered. Data were collected in students' classrooms. Baseline data (T1) were collected right before the first lesson plan was taught. Posttest data (T2) were collected right after the fifth, and final, lesson plan was taught, at 5 weeks. Additional follow-ups were collected at seven weeks (T3), 12 weeks (T4) and 20 weeks (T5).

As in Study 1, the two interns who implemented the curricula completed a checklist after each lesson. Results indicated that 100% of the outlined goals and objectives of each lesson were implemented as intended.

Analytic Strategy

We used one-tailed tests because all hypotheses were directional and theory-driven. Because the data were nested within individuals over time, we used hierarchical linear modeling (HLM; cf. Raudenbush & Bryk, 2002) to examine the treatment effects longitudinally. Two levels of analysis were specified: (1) within-person (Level 1), with the time variable as the only predictor, and (2) between-persons (Level 2), with the treatment condition as the only predictor. The Level 1 model examined within-person change over time for repeated measures, whereas the Level 2 model examined between-persons differences in the change trajectories.

The HLMs were done in two stages. The first stage involved a series of within-person models to determine the optimal description of the overall trajectories characterizing the repeated measures for the entire sample. These "unconditional" models had time as the only predictor. A null (i.e., intercept-only) model was first fitted to the data, followed by the addition of a linear time term and then a quadratic time term, to explore if the added terms would improve model fit. We also explored whether allowing the intercept, linear, and quadratic time terms to vary across individuals would boost model fit. The time variable was centered at T1 (baseline) and specified in weeks so that T2 was five weeks, T3 was seven weeks, T4 was twelve weeks, and T5 was twenty weeks. This first stage produced optimal unconditional models for entire sample in which the mean intercept indicated the average standing just before the intervention and the mean slope indicated average rates of change. Significant variances in the intercepts and slopes implied between-persons variation in those parameters that may be explained by Level 2 predictors.

In the second stage of analysis, treatment condition was incorporated to explain these variances. These "conditional" models enabled examination of any intervention effects. The intervention effect is the difference between the treatment condition (coded as 1) from the control condition (coded as 0). A significant treatment effect on the intercept indicated that there were significant group mean differences on the dependent variable before the start of the intervention (since classes and not individuals were randomly assigned to conditions, it was necessary to examine group differences at baseline). A significant treatment effect on the slopes, or cross-level interactions between time and treatment, indicated that the two groups had different rates of change on the dependent variable.

Results

Descriptive statistics for the variables across all 5 time points are displayed separately for the treatment and control conditions in Table 1. We expected that compared to the control condition, the treatment condition would reveal longitudinal increases in individuals' benefit appraisals (i.e., grateful thinking), grateful mood, and subjective well-being (i.e., greater positive affect and life satisfaction and lower negative affect). Thus, our first step was to determine the optimal unconditional models for these variables. Table 2 shows the mean intercepts and mean linear slopes, which index the starting point and weekly change on each variable for the whole sample. A quadratic time term added little to the within-person model, making a linear model the optimal Level-1 trajectory. The intercepts and linear slopes of each variable also had significant variances, indicating that Level-2 differences could account for variability in both parameters. Having identified the optimal within-person trajectory and found that there was variability due to between-persons factors, we proceeded to the conditional model analyses to examine if the intervention had any effects on our dependent variables.

Effectiveness of Intervention

The unconditional model with benefit appraisals revealed a significant mean intercept for the whole sample at $\gamma_{00} = 39.798$, $p < .001$, and a significant mean linear slope of $\gamma_{10} = 0.114$, $p < .001$, for each week. This means that the benefit appraisal scores increased linearly over time for the entire sample. To evaluate if students in the intervention condition exhibited more linear growth in benefit appraisals (i.e., their grateful thinking) than students in the control condition, we examined the conditional HLM with benefit appraisals, which included a between persons covariate for experimental condition. Figure 2 shows that the two groups started out with similar levels of benefit appraisals but that only the intervention group showed linear increases over the course of 20 weeks. Each week, students in the intervention condition strengthened their benefit

appraisals by 0.196 units, while those in the control condition stayed relatively flat (see Table 3). The intervention had no significant effect on the intercept, t (df = 80) = -0.05, *ns*, but it did on linear slope, t (df = 80) = 3.09, p = .001, effect size r = .33. This linear slope difference lead to mean differences in benefit appraisals between the control and intervention groups at 12 weeks, t (df = 80) = 2.39, p = .01, d = .53, and at 20 weeks, t (df = 80) = 3.31, p = .001, d = .74.

Since increases in benefit appraisal were found in the intervention condition, indicating an in increase in grateful thinking, next we proceeded to analyze whether the intervention also had effects on students' gratitude and subjective well-being (i.e., positive affect, negative affect, and life satisfaction).

Gratitude

The unconditional model with gratitude revealed a significant mean intercept at γ_{00} =12.378, p < .001, and no mean linear slope (γ_{10} =0.14, *ns*) for the whole sample. The conditional model showed no significant intervention effect on the intercept, t (df = 80) = -0.05, *ns*, but did show a significant intervention effect on linear slope, t (df = 80) = 1.68, p = .05, effect size r = .18. With each week, students in the intervention condition gained 0.072 units of gratitude, while the control group stayed relatively static (see Table 3). This general pattern was sustained and lead to significant differences in mean levels of gratitude at 12 weeks, t (df = 80) = 1.82, p = .04, d = .41, and at 20 weeks, t (df = 80) = 2.14, p = .02, d = .48 (see Figure 2).

Positive and Negative Emotion

The unconditional model with positive affect as the dependent variable revealed a significant mean intercept at γ_{00} =3.656, p < .001, and no mean linear slope (γ_{10} =0.004, *ns*) for the whole sample. Results from the conditional analyses showed no intervention effect on the intercept t (df = 80) = -0.09, *ns*, but did show a significant intervention effect on linear slope, t

(df = 80) = 2.72, p = .004, effect size r = .29. Students in the intervention condition gained 0.019 units of positive affect each week, while the control group stayed relatively flat (see Table 3). This pattern lead to significant differences in mean levels of positive affect at 12 week s, t (df = 80) = 1.77, p = .04, d = .40, and at 20 weeks, t (df = 80) = 2.46, p = .008, d = .55 (see Figure 2).

In terms of negative affect, the unconditional model yielded a significant mean intercept at γ_{00} =1.679, p < .001, and a significant mean linear slope (γ_{10} = -0.007, p < .05) for the whole sample. This means that negative affect decreased linearly for the entire sample. Results from the conditional analyses revealed an intervention effect on the intercept, t (df = 80) = -2.13, p = .04, but not on the linear slope, t (df = 80) = 1.01, *ns*.

Life Satisfaction

The unconditional model showed a significant mean intercept at γ_{00} =30.123, p < .001, and a significant mean linear slope (γ_{10} = 0.046, p < .05) for the whole sample, indicating that life satisfaction increased linearly for everyone during the 20 weeks. Conditional analyses revealed an intervention effect on the intercept, t (df = 80) = 2.86, p = .006, but not on the linear slope, t (df = 80) = -1.13, *ns*.

Brief Discussion

The treatment condition was effective in altering appraisals of perceived intention, cost, and value of interpersonal benefits. Students who were in this condition exhibited growth in benefit appraisals (i.e., grateful thinking) over time, whereas students in the attention-control condition did not. The peak difference in magnitude between the two groups was seen at T5 (five months after the start of the intervention), suggesting somewhat lasting effects of the intervention. Using Cohen's definition (1992), this peak in benefit appraisals is near to a large effect.

The main goal of this study was to induce gratitude by helping to educate children about benefit appraisals. Results provided support for this notion. Students in the treatment condition exhibited growth in gratitude over time, whereas students in the control condition remained static. Though the effect size was small, the peak difference in magnitude between the two groups again emerged by the final time point, which amounted to a medium size effect.

With respect to the intervention's impact on subjective well-being, we found a similar pattern for positive affect. That is, students in the treatment condition exhibited growth in positive moods relative to the students in the control condition, whose positive moods remained stable. This also resulted in a medium size difference between the two groups by the final time point. Such evidence provides further support for the use of benefit appraisal education as a viable gratitude intervention, showing that our intervention produced results analogous to those commonly obtained through more established gratitude intervention techniques. However, the intervention did not influence the other two measures of subjective wellbeing (i.e., negative affect or life satisfaction) in the study.

General Discussion

Our research was the first to test a gratitude intervention with children as young as 8 (cf. Froh, Kashdan, Ozimkowski, & Miller, 2009). Our results converge with previous research confirming the empirical benefits of gratitude interventions with older youth as well as with adults. We predicted that 8-11 year old children participating in a curriculum that trained their schemas for receiving help/benefits from others would engage in more grateful cognitive processing, compared to a control condition, and that as a result they would experience more gratitude and subjective well-being. This pattern was mostly confirmed across the two studies reported here. This preliminary study with convenience samples supports the notion that

elementary school children can be taught to think more gratefully via a brief cognitive intervention delivered in classrooms. Further, increases in gratitude were linked to increases in thanking behavior (in Study 1) and general positive affect up to 20-weeks later (in Study 2). The observations that increases in one specific positive mood state (i.e., gratitude) may have facilitated behavioral changes and increases in other positive emotions (e.g., happiness) are in line with theories suggesting that gratitude should lead to reciprocal kind acts (Bartlett & DeSteno, 2006) and increases in well-being (Emmons & McCullough, 2003).

Our research makes a notable contribution to the developing science of gratitude interventions. The benefit-appraisal curriculum introduced here and tested in these two studies offers an additional empirically-validated intervention for enhancing gratitude. Wood et al. (2010) classified gratitude interventions into three categories: gratitude journals, grateful writing/contemplations, and behavioral expressions of gratitude. Although the journaling approach has been used most often with adults, it is not without limitations (Wood et al., 2010). One of these may be in its use with younger children, particularly in experimental research where uniformity of the experimental manipulation within condition is paramount. The journaling approach allows for wider variability in what participants focus on (e.g., the number of things they are grateful for, the degree of elaboration and personalization involved). The curriculum introduced here is much more standardized. Benefit appraisal education offers a uniform, structured lesson plan that allows for less within-group variability. The benefit-appraisal curriculum provides a relatively easy-to-implement tool that complements other positive psychology exercises available for use by school psychologists.

Our main goal was to examine if teaching benefit appraisals could produce gratitude in children during the age range when gratitude is thought to mature in development. The results

were promising in this respect. In fact, because the moral self develops through more advanced social interactions during middle childhood (Eisenberg, Spinrad, & Sadovsky, 2006), an intervention that scaffolds appraisals of helpful exchanges may be an optimal way to promote gratitude during this period. Developmental research studying processes involved in such an intervention can help tailor benefit appraisal education to various age groups. For instance, it would be fruitful to understand why the appraisals of value, cost, and intention each boost gratitude in different age groups. Such knowledge will also help to better understand trait gratitude during this formative period in development.

A methodological strength of our study is that we were able to closely monitor the interventions as they unfolded. We took care to ensure that all procedures, both within and across conditions and grade levels, were strictly followed. Compared to other gratitude interventions such close monitoring represents an improvement. However, we acknowledge that use of self-report checklists to assess treatment integrity was a limitation because self-presentation concerns toward the experimenter (i.e., contact author) may have influenced administrators' completion of the checklists. It would have been ideal to observe and rate some of the curriculum administration sessions, but logistics prevented this from happening.

Another drawback is that we did not randomly assign students to conditions, thus limiting our ability to draw strong causal inferences. Random assignment of individuals was not possible at these schools given the burden true random assignment would have posed. However, random assignment of individuals would provide a stronger test of this intervention because this would eliminate confounds due to individual differences between students or classroom teachers.

Another limitation is that students from the two different conditions could have interacted with each other, learning who received what curriculum. Having learned that they did not receive

the benefit-appraisal curriculum, students receiving the attention-control curriculum may have then seen their treatment as not credible, having no impact on them. This negative view of the control condition could potentially help explain the between-group differences. Future researchers should consider assessing this treatment expectation at pre-test to control for it in later analyses.

Further, our participant pool was restricted in socioeconomic and demographic diversity. Data were obtained from students in an affluent school district, limiting the generalizability of our findings. Our samples comprised of students living in communities and schools that are different from many others. The distributions of cognitive and academic skills are higher and narrower and the students have fewer unmet social or emotional needs, compared to average school districts. However, youth who are lower in positive emotions benefit more from gratitude interventions than students who are higher in positive emotions (Froh, Kashdan, Ozimkowski, & Miller, 2009). Thus, it may be that students with greater academic, emotional, or social needs would benefit more from our benefit-appraisal curriculum. Thus, future research should examine the effects of gratitude interventions in a broader range of family income levels and across various ethnic groups, especially among disadvantaged populations. Such studies may yield new and different effects.

Conclusion

At a broader level, there are implications of this research for school settings and positive youth development. Many secondary students report dissatisfaction with their school experience (Huebner et al., 2005). Experiencing and expressing gratitude is a simple way to counter negative appraisals of school and increase school bonding and social adjustment (Froh et al., 2008). Given such findings, future research should examine whether gratitude

promotion also impacts helping, cooperation, and trust between students. Evidence suggests that gratitude boosts social cohesion, relational and job satisfaction, and organizational functioning too (Emmons, 2004). So the improved behaviors that could ensue from gratitude promotion in schools would likely spread to teachers and staff, encouraging them to work harder for students and helping to prevent burnout. Therefore, teaching students to develop an attitude of gratitude may foster stronger bonds to schools and communities, helping both students and schools to thrive (Froh & Bono, 2011).

Given the ease of inducing gratitude, its potential for making school tasks and exercises more creative and interesting, and its benefits to individuals and their environments, gratitude interventions for youth should be seriously considered by those interested in fostering positive youth development. Gratitude may strengthen supportive relationships and increase prosocial behavior in adolescents (Froh, Yurkewicz, & Kashdan, 2009), and these resources may be especially useful for students with special needs, physical disabilities, or social adjustment difficulties. Teaching students to respond gratefully to friends who protect them from a bully, encourage them to persist on a task, or offer help on homework can strengthen friendships, increasing students' satisfaction with school and their chances of succeeding.

Establishing social relationships and a sense of identity are central challenges as children enter adolescence. Both are complicated in contemporary culture, where youths' social worlds are characterized by unprecedented amounts of time spent with mass media and exposure to commercial forces that push materialistic pursuits and risky behaviors, which can undermine healthy social development. Gratitude can counteract such forces and help youth thrive (Froh et al., 2011). Acknowledging kind acts from others strengthens relationships, helps secure new ones, and improves health and well-being. Education that facilitates cognitive appraisals that

produce gratitude should be encouraged as early in life as possible so that young persons have a head start toward becoming mature receivers and providers of benevolent actions. Grateful thinking, then, may help improve the supportiveness of school climates—as well as bringing the added benefit of boosting students' interest in getting the most out of school.

References

Algoe, S. B. (2012). Find, remind, and bind: The functions of gratitude in everyday relationships. *Social and Personality Psychology Compass, 6(6),* 455-469.

Algoe, S. B., Haidt, J., & Gable, S. L. (2008). Beyond reciprocity: Gratitude and relationships in everyday life. *Emotion, 8,* 425-429.

Bartlett, M. Y., & DeSteno, D. (2006). Gratitude and prosocial behavior: Helping when it costs you. *Psychological Science, 17,* 319–325.

Baumgarten-Tramer, F. (1938). "Gratefulness" in children and young people. *Journal of Genetic Psychology, 53,* 53-66.

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders.* Oxford, England: International Universities Press.

Bono, G., Froh, J. J., & Forrett, R. (in press). Gratitude in school: Benefits to students and schools. In M. Furlong, R. Gilman, & E. S. Huebner (Eds.), Handbook of positive psychology in schools (2nd ed., pp. xx-xx). New York: Routledge.

Bono, G., Froh, J. J., & Emmons, R. A. (2012, August). Searching for the developmental role of gratitude: A 4-year longitudinal analysis. In J. Froh (chair), Helping youth thrive: Making the case that gratitude matters. Symposium presented at the American Psychological Association, Orlando, FL.

Buck, R. (2004). The gratitude of exchange and the gratitude of caring: A developmental-interactionist perspective of moral emotion. In R.A. Emmons & M. E. McCullough (Eds.), *The psychology of gratitude* (pp. 100-122). New York: Oxford University Press.

Coe, R. (2002). *It's the effect size, stupid: What effect size is and why it is important.* Paper presented at the Annual Conference of the British Educational Research Association,

University of Exeter, England.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112,* 155–159.

Eisenberg, N., Spinrad, T. L., & Sadovsky, A. (2006). Empathy-related responding in children. In M. Killen & J. Smetana (Eds.) *Handbook of moral development* (pp. 517–549). Mahwah, NJ: Erlbaum.

Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An empirical investigation of gratitude and subjective wellbeing in daily life. *Journal of Personality and Social Psychology, 84,*377–389.

Emmons, R. A. (2004). Gratitude. In M. E. P. Seligman & C. Peterson (Eds.), The VIA taxonomy of human strengths and virtues. New York: Oxford University Press.

Emmons, R. A., & Shelton, C. M. (2002). Gratitude and the science of positive psychology. In C. R. Synder & S.J. Lopez (Eds.), *Handbook of positive psychology* (pp. 459-471). New York: Oxford University Press.

Froh, J. J.**,** & Bono, G. (2011). Gratitude in youth: A review of gratitude interventions and some ideas for applications. *NASP Communiqué,* 39(5), 1, 26-28.

Froh, J. J., Bono, G., & Emmons, R. A. (2010). Being grateful is beyond good manners: Gratitude and motivation to contribute to society among early adolescents. *Motivation and Emotion, 34,* 144-157.

Froh, J. J., Emmons, R. A., Card, N. A., Bono, G., & Wilson, J. (2011). Gratitude and the reduced costs of materialism in adolescents. *Journal of Happiness Studies, 12,* 289-302.

Froh, J. J., Fan, J., Emmons, R. A., Bono, G., Huebner, E. S., & Watkins, P. (2011). Measuring gratitude in youth: Assessing the psychometric properties of adult gratitude scales in children and adolescents. *Psychological Assessment, 23,* 311-324.

Froh, J. J., Kashdan, T. B., Ozimkowski, K. M., & Miller, N. (2009). Who benefits the most from a gratitude intervention in children and adolescents? Examining positive affect as a moderator. *The Journal of Positive Psychology, 4,* 408-422.

Froh, J. J., Miller, D. N., & Snyder, S. (2007). Gratitude in children and adolescents: Development, assessment, and school-based intervention. *School Psychology Forum, 2,* 1-13.

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.

Graham, S. (1988). Children's developing understanding of the motivational role of affect: An attributional analysis. *Cognitive Development, 3,* 71-88.

Heider, F. (1958). *The psychology of interpersonal relations.* New York: John Wiley.

Huebner, E. S., Suldo, S., & Gilman, R (2006). Life satisfaction among children and adolescents. In G. Bear & K. Minke (Eds.), *Children's needs* (3rd ed.)(pp. 357-368). Washington, DC: National Association of School Psychologists.

Huebner, E. S., Valois, R. F., Paxton, R. J., & Drane, J. W. (2005). Middle school students' perceptions of quality of life. *Journal of Happiness Studies, 6,* 15-24.

Laurent, J., Cantanzaro, J. S., Thomas, J. E., Rudolph, D. K., Potter, K. I., Lambert, S., et al. (1999). A measure of positive and negative affect for children: Scale development and preliminary validation. *Psychological Assessment, 11,* 141-169.

Lyubomirsky, S., Dickerhoof, R., Boehm, J. K., & Sheldon, K. M. (2011). Becoming happier

takes both a will and a proper way: An experimental longitudinal intervention to boost well-being. *Emotion, 11,* 391-402.

McCullough, M. E., Emmons, R. A., & Tsang, J. A. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology, 82,* 112-127.

McCullough, M. E., Kimeldorf, M. B., & Cohen, A. D. (2008). An adaptation for altruism? The social causes, social effects, and social evolution of gratitude. *Current Directions in Psychological Science, 17*, 281−284.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Newbury Park, CA: Sage.

Seligson, J. L., Huebner, E. S., & Valois, R. F. (2003). Preliminary validation of the Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS). *Social Indicators Research, 61,* 121 – 145.

Seligson, J. L., Huebner, E. S., & Valois, R. F. (2005). An investigation of a brief life satisfaction scale with elementary school children. *Social Indicators Research, 73,* 355-374.

Shadish, W. R., Cook, T.D., & Campbell, D.T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin.

Silverstein, S. (1964). *The giving tree.* New York: Harper & Row.

Smith, A. (1790/1976). *The theory of moral sentiments* (6th ed.): Indianapolis, IN: Liberty Classics. (Original work published 1790).

Tesser, A., Gatewood, R., & Driver, M. (1968). Some determinants of gratitude. *Journal of Personality and Social Psychology, 9,* 233-236.

Verkuyten, M., & Thijs, J. (2002). School satisfaction of elementary school children: The role of performance, peer relations, ethnicity, and gender. *Social Indicators Research, 59,* 203−228.

Weiner, B., Russell, D., & Lerman, D. (1979). The cognition–emotion process in achievement-related contexts. *Journal of Personality and Social Psychology, 37,* 1211-1220.

Wentzel, K. R., Barry, C., & Caldwell, K. (2004). Friendships in middle school: Influences on motivation and school adjustment. *Journal of Educational Psychology, 96,* 195-203.

Wood, A. M., Froh, J. J., & Geraghty, A. W. A. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review, 30,* 890-905.

Wood, A. M., Joseph, S., & Linley, P. A. (2007). Coping style as a psychological resource of grateful people. *Journal of Social and Clinical Psychology, 26,* 1108 - 1125.

Wood, A. M., Joseph, S., & Maltby, J. (2009). Gratitude predicts psychological well-being above the big five facets. *Personality and Individual Differences, 46,* 443-447.

Wood, A. M., Maltby, J., Stewart, N., Linley, P. A., & Joseph, S. (2008). A social-cognitive model of trait and state levels of gratitude. *Emotion, 8,* 281-290.

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Table 1

Means and Standard Deviations of Dependent Variables Across Observations for Intervention and Control Conditions, Study 2

Outcome	Attention-Control Condition Mean (*SD*)	Benefit-Appraisal Intervention Mean (*SD*)
Grateful Thinking		
T1	38.86 (5.75)	38.07 (6.12)
T2	40.32 (4.57)	42.37 (2.56)
T3	40.76 (4.92)	42.79 (3.09)
T4	40.76 (4.66)	42.44 (3.29)
T5	39.63 (5.73)	42.67 (2.80)
Gratitude		
T1	12.18 (3.00)	12.30 (2.61)
T2	12.11 (3.32)	12.82 (2.48)
T3	12.00 (3.18)	12.95 (2.86)
T4	12.27 (3.34)	13.16 (2.70)
T5	11.82 (3.52)	13.23 (2.49)
Positive Affect		
T1	3.64 (0.77)	3.56 (0.72)
T2	3.64 (0.73)	3.89 (0.57)
T3	3.63 (0.85)	3.69 (0.73)
T4	3.70 (0.86)	3.96 (0.69)
T5	3.55 (0.87)	3.96 (0.65)
Negative Affect		
T1	1.87 (0.68)	1.68 (0.50)
T2	1.73 (0.60)	1.48 (0.44)
T3	1.60 (0.53)	1.45 (0.44)
T4	1.71 (0.60)	1.57 (0.56)
T5	1.60 (0.65)	1.51 (0.48)
Life Satisfaction		
T1	28.34 (4.82)	30.73 (3.62)
T2	29.34 (3.79)	31.61 (3.62)
T3	30.11 (4.10)	31.84 (4.21)
T4	29.59 (4.80)	31.64 (4.17)
T5	30.35 (4.30)	31.47 (3.95)

Note. T1 = baseline. T2 = immediate posttest. T3 = 7-week follow-up. T4 = 12 week follow-up. T5 = 20 week follow-up. Scores for benefit appraisals could range from 9 to 45. Scores for gratitude could range from 3 to 15. Scores for positive affect and negative affect could range from 1 to 5 because the mean was calculated due to some missing data. Scores for life satisfaction could range from 7 to 35.

Table 2

Hierarchical Linear Model Results Based on Unconditional Models, Study 2

Dependent Variable	Intercept		Linear Slope	
	γ_{00}	τ_0	γ_{10}	τ_1
Grateful Thinking	39.798**	14.577**	0.114**	0.032**
Gratitude	12.368**	5.621**	0.014	0.011**
Positive Affect	3.656**	0.357**	0.004	0.001**
Negative Affect	1.679**	0.157**	-0.007*	0.013*
Life Satisfaction	30.123**	13.771**	0.046*	0.020**

Note. γ_{00} and γ_{10} refer to the mean intercept and mean linear slope, respectively. τ_0 and τ_1 refer to the variance of the intercept and linear slope across individuals, respectively.

*$p < .05$, **$p < .001$

Table 3

Hierarchical Linear Model Results Based on Conditional Models, Study 2

Dependent Variable	Attention-Control Condition	Intervention Effect[a]
Grateful Thinking		
Intercept	39.820 (0.753)***	-0.049 (0.991)
Linear Slope	0.021 (0.038)	0.175 (0.057)**
Gratitude		
Intercept	12.185 (0.479)***	0.339 (0.599)
Linear Slope	-0.016 (0.029)	0.0563 (0.034)*
Positive Affect		
Intercept	3.663 (0.117)***	-0.014 (0.149)
Linear Slope	-0.004 (0.007)	0.023 (0.008)**
Negative Affect		
Intercept	1.798 (0.085)**	-0.223 (0.104)*
Linear Slope	-0.011 (0.005)	0.006 (0.006)
Life Satisfaction		
Intercept	28.827 (0.667)***	2.416 (0.845)**
Linear Slope	0.072 (0.037)	-0.049 (0.043)

Note. The numbers in parentheses were standard errors. [a] Intervention effect = the difference between the gratitude curriculum (coded as 1) from the control condition (coded as 0).

*p <.05, **p < .01, ***p<.001.

Figure 1. Theoretical Framework for Gratitude Intervention and Effects

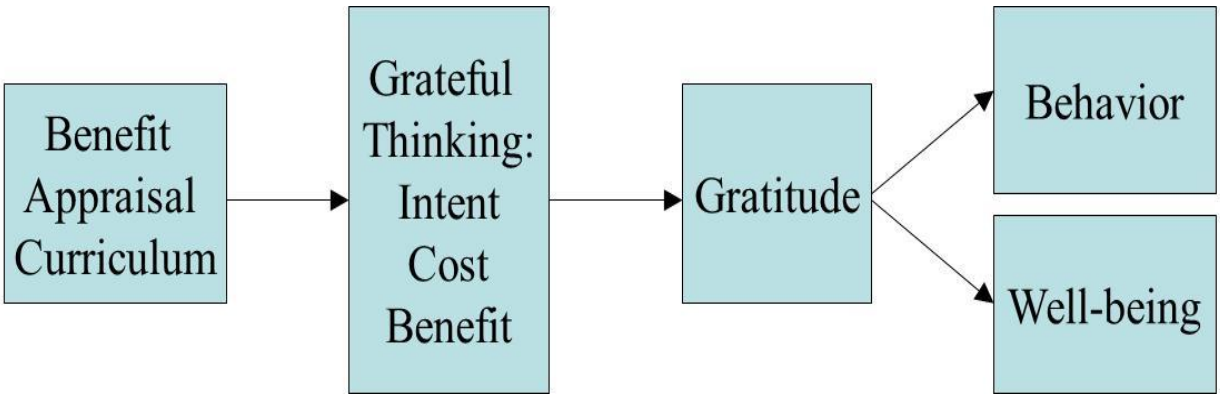
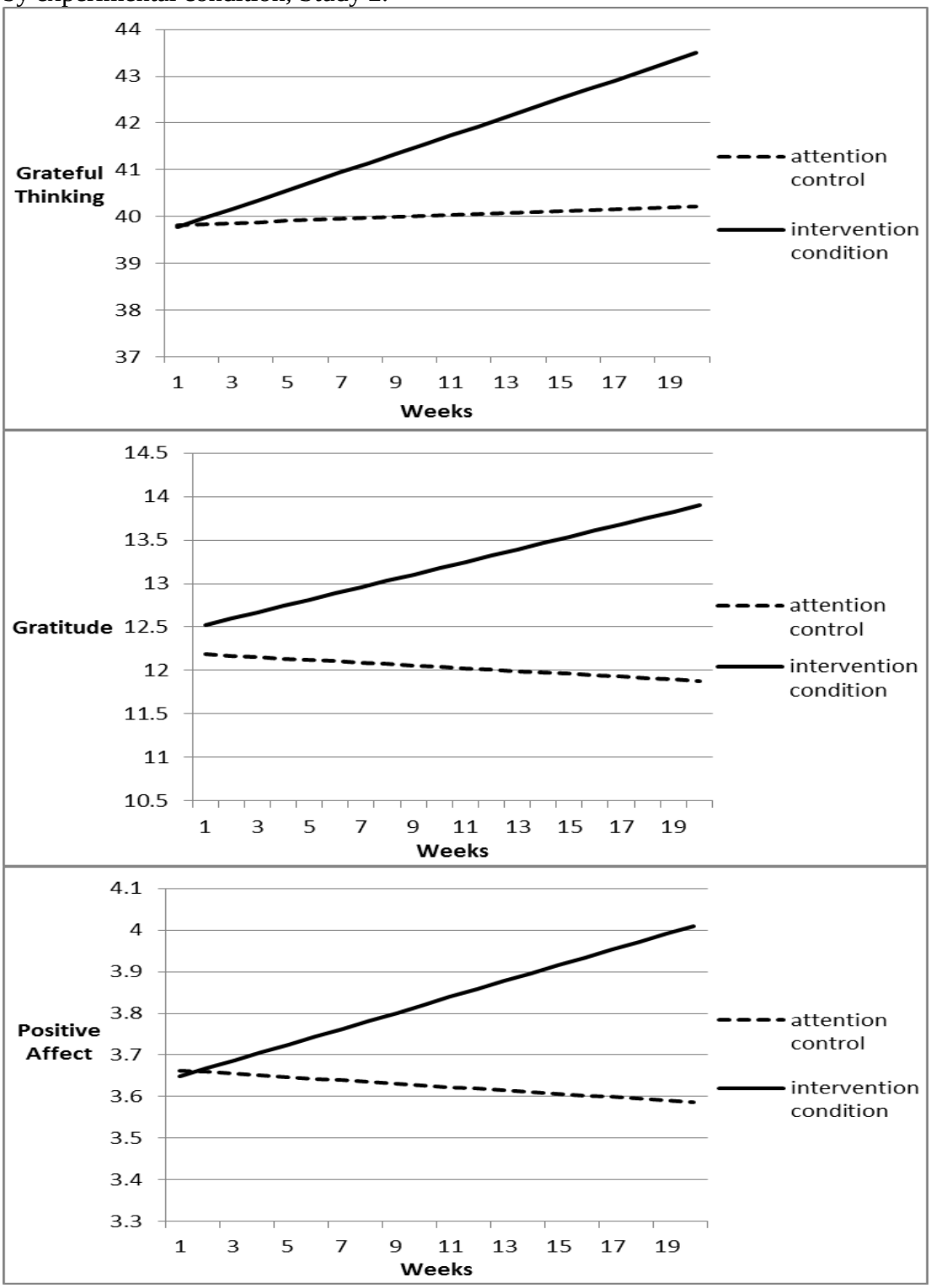


Figure 2. Growth curves of benefit appraisals (grateful thinking), gratitude, and positive emotion by experimental condition, Study 2.



Note. Treatment slopes statistically significant at $p = .001$ for benefit appraisals (i.e., grateful thinking), $p = .02$ for gratitude, and $p = .008$ for positive affect. Scores for grateful thinking could range from 9 to 45. Scores for gratitude could range from 3 to 15. Scores for positive affect could range from 1 to 5 because the mean was calculated due to some missing data.

Appendix

Comparison Between the Benefit-Appraisal and Attention-Control Lesson Plans

Benefit-Appraisal Lesson Plans	**Attention-Control Lesson Plans**
Session 1	
Set It Up: facilitator introduces self and explains what will take place during the meetings. *Talk about it:* Facilitator writes down word "**thankful**" and has the group discuss the word and what it means. *Jot it down:* Facilitator hands out journals and the students are instructed that these will be their **gratitude** journals. The students then jot down three things that **they are most thankful for.** *Watch it:* The facilitator will show the video clip: "**Gratitude Is"** which displays various terms and feelings associated with gratitude. *Sum it up:* The facilitator will ask the students to sum up what they learned today and instruct them to think of other things that **they feel grateful for** to share during their next meeting. Raffle tickets are then handed out.	*Set It Up:* facilitator introduces self and explains what will take place during the meetings. *Talk about it:* Facilitator writes down word "**activities**" and has the group discuss the word and what it means. *Jot it down:* Facilitator hands out journals and the students are instructed that these will be their **daily events** journal. The students then jot down three things that **they do throughout the day.** *Watch it:* The facilitator will show the video clip: "**Active Kids"** which displays various pictures of children participating in different activities. *Sum it up:* The facilitator will ask the students to sum up what they learned today and instruct them to think of something new **that they did this week** for their next meeting. Raffle tickets are then handed out.
Session 2	
Intentions: *Set it up:* Facilitator will review the previous session and the assignment that was to be completed for this session. *Talk about it:* The facilitator explains that today they will talk more about **grateful feelings, and explains what the word intentional means.** *Think about it:* Students take out their **gratitude journals and, working in teams, answer questions about two passages that the facilitator reads to them.** *Jot it down:* In their journals, students will write about a **time that someone went out their way to help them.** *Sum it up:* Facilitator sums up the session and explains that for next week students are to look out for **moments that they feel thankful.**	**Others' Activities**: *Set it up:* Facilitator will review the previous session and the assignment that was to be completed for this session. *Talk about it:* The facilitator explains that today they will talk more about the **different activities** we do. *Think about it:* Students take out their **daily events journal, pair up, and interview each other to find out more about what different things their partner might do in their day.** *Jot it down:* In their journals, students will think of three **activities that they learned about the person they interviewed.** *Sum it up:* Facilitator sums up the session and explains that for next week students are to look out for **new activities that they do.**

<table>
<tr><td colspan="2">Session 3</td></tr>
<tr><td>Cost:
Set it up: Facilitator reviews the previous session and goes over the assignment from the last session.
Talk about it: Students are asked to describe the word cost and are taught the different meanings of the word and how it could mean a time when someone gave up something for someone else.
Read about it: The facilitator reads the book “The Giving Tree” (Silverstein, 1964) and then discusses the book with the students.
Create it: Students are given a picture of a leaf and are asked to write down one thing they would do to show the tree that they were grateful for what she did for them.
Jot it down: Students write down a time that someone went out of their way to help them.
Sum it up: Facilitator sums up the session and explains the assignment for next week, which is to write down different times someone helped them and what they did.</td><td>Seasonal Activities:
Set it up: Facilitator reviews the previous session and goes over the assignment from the last session.
Talk about it: Students are asked to describe the different things they might do in the different seasons of the year.
Read about it: The facilitator reads four poems about different activities that occur throughout the seasons.
Create it: Students are given a graphic organizer of the four different seasons and are asked to list or draw different activities that they do in each season.
Jot it down: Students write three things that they typically do during one season of the year.
Sum it up: Facilitator sums up the session and explains the assignment for next week, which is to write down new activities they participated in and what happened.</td></tr>
<tr><td colspan="2">Session 4</td></tr>
<tr><td>Benefit:
Set it up: Facilitator reviews the previous session and goes over the assignment from the last session.
Talk about it: Facilitator explains what benefit means and asks for examples of benefit as it relates to gratitude.
Create it: Students open their journals and write some of the things that others have done to help better them in some way.
Jot it down: Also in their journals, students write about a time that someone went out of their way to help them.
Sum it up: the facilitator sums up what they discussed in the meeting and assigns the students to think of the times that someone helped them during the week and write about its benefits.</td><td>Daily Routine Activities:
Set it up: Facilitator reviews the previous session and goes over the assignment from the last session.
Talk about it: Facilitator explains what a routine is and asks for examples of daily routine activities.
Create it: In their journals, students write some of the things that they do every day in the chart.
Jot it down: Also in their journals, students write three daily routine activities.
Sum it up: The facilitator sums up what they discussed in the meeting and assigns the students to thinking about the new activities they participated in and write about what happened.</td></tr>
<tr><td colspan="2">Session 5</td></tr>
<tr><td>Set it up: The facilitator reviews the previous session and goes over last week’s assignment.</td><td>Set it up: The facilitator reviews the previous session and goes over last week’s assignment.</td></tr>
</table>

Talk about it: The facilitator continues to review by writing down three components **(intention, cost, and benefit) on the board with a large equal sign and the word "grateful' next to it**. *Act it out:* The facilitator assists the students with **role play situations of feeling grateful.** *Jot it down:* In their journals, students **write about a time someone went out of their way to help them and explains the intention, cost, and benefit.** *Watch it:* The facilitator shows the video clip **"The Gratitude Dance"**. *Sum it up:* The facilitator sums up everything they talked about.	*Act it out:* Facilitator assists the students in a game of **charades to act out different activities we might do.** *Jot it down:* In their journals, students list **as many activities as they can think of.** *Watch it:* The facilitator shows a funny video clip about daily activities. *Sum it up:* The facilitator sums up everything they talked about.

Note. Bold indicates differences between the lesson plans.