

## **Establishing the effectiveness of a gratitude diary intervention on children's sense of school belonging**

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### Abstract

*Aim:* The promotion of wellbeing in schools using evidence-based interventions from the field of Positive Psychology is a growing area of interest. These interventions are based on the principle that sustainable changes in wellbeing can be achieved through regularly engaging in simple and intentional activities. This study examines the effectiveness of a school-based gratitude diary intervention to promote school belonging for primary school aged pupils (age range 7-11 years).

*Method:* The intervention took place in a one form entry primary school for four weeks and involved participants writing a diary about things that they were either grateful for in school that day or about neutral school events.

*Findings:* Participants who completed the gratitude intervention demonstrated enhanced school belonging and gratitude relative to the control group, although this was moderated by gender with the gratitude diary showing clearer benefits for males. Increases in gratitude were positively correlated with increases in school belonging.

*Limitations:* The lack of a follow-up measure meant that it was not determined whether positive outcomes were maintained. Participants' diary entries were not analysed for content.

*Conclusions:* The findings extend the evidence base concerning the use of gratitude diaries with children and indicate that this intervention can be beneficial for children younger than research has previously demonstrated. This study also illustrates how a

gratitude diary intervention can be used to build social resources and makes a novel connection between gratitude and sense of belonging. Implications for how this simple intervention has the potential to have a systemic impact on the wellbeing of pupils and staff are discussed.

*Key words:* gratitude, gratitude intervention, sense of school belonging

The construct of gratitude is gaining wide attention in the field of positive psychology, an area of research that aims to gain greater understanding of how positive emotions and character traits can contribute to positive wellbeing (Seligman et al., 2005). Advocates of positive psychology assert that interventions that prompt people to engage in simple intentional activities can be more effective in promoting wellbeing compared to striving to change their circumstances (Sheldon & Lyubomirsky, 2006). A growing area of interest within positive psychology is the potential for organisations like schools to promote wellbeing and resilience alongside achievement-related outcomes (Bird & Markle, 2012; Seligman et al., 2009). The current study seeks to investigate the impact of a school-based gratitude intervention to increase levels of the sense of school belongingness (SoSB).

Gratitude arises following help from others, but is also a process that involves awareness of and appreciation on positive aspects of life (Wood, Froh & Geraghty, 2010). The empirical literature concerning gratitude has mainly involved adults, and has used cross-sectional and longitudinal designs to examine how gratitude is associated with a wide variety of factors related to wellbeing. For example, positive emotions and optimism (Hill & Allemand, 2011; McCullough, Emmons & Tsang, 2002), positive memory bias (Watkins, Grimm & Kolts, 2004), positive reframing (Lambert, Fincham & Stillman, 2012) and life satisfaction (Park, Peterson & Seligman, 2004; Wood, Joseph & Maltby, 2008). Trait gratitude has been shown to uniquely predict levels of wellbeing, above the effect of thirty other personality traits (Wood, Joseph & Maltby, 2009). Gratitude has been found to be negatively correlated with stress (Wood et al., 2008), burnout (Chan, 2010) and buffer the effect of two suicide risk factors: hopelessness and depressive symptoms (Kleiman et al., 2013). There are many hypotheses about the psychological mechanisms that influence the relationship between gratitude and wellbeing. Gratitude is a trait that is hypothesised to foster a positive bias towards interpreting help as more beneficial and people's behaviour as

more altruistic (Wood et al., 2010). Gratitude is also thought to promote resilience as it provides an adaptive coping mechanism for dealing with negative life events (Lambert et al., 2012; Watkins et al., 2008). These hypotheses are in line with Fredrickson's broaden-and-build theory (Fredrickson, 2001), which suggests that the evolutionary mechanism of positive emotions is to broaden people's thought-action repertoire and build personal resources. Fredrickson has argued that "*Gratitude, like other positive emotions, broadens and builds*" (Fredrickson, 2004, p1). Gratitude is thought to be linked to wellbeing because it promotes creative thinking, positive emotions and positive reflection (Emmons & McCullough, 2003; Fredrickson). Research has also linked gratitude to wellbeing through the building of social resources such as increasing feelings of connectedness (Froh, Bono & Emmons, 2010), pro-social emotions such as forgiveness, compassion, trust and empathy (Dunn & Schweitzer, 2005; Hill & Allemand, 2011; McCullough et al., 2001) and increasing perception of social support (Algoe, Haidt & Gable, 2008; Wood et al., 2008). In addition, gratitude has been found to be a moral reinforcer, which motivates people to carry out pro-social behaviour (McCullough et al., 2001).

The psychological literature has started to examine the causal effects of gratitude using a gratitude diary (i.e. writing down the things that one is grateful for in life) in comparison to a control group or an alternative intervention. Many of these studies replicate the methodology of Emmons & McCullough (2003), who asked participants to reflect things they were grateful for on a daily or weekly basis. Much of the published literature on gratitude diaries uses adult participants (e.g. Chan, 2013; Kaplan et al., 2013; Ouweneel, Le Blanc & Schaufeli, 2014) with only two studies to date involving children and adolescents (Froh et al., 2008; Owens & Patterson, 2013). Research has shown that across all age ranges, gratitude diary interventions have the potential to increase many of the outcomes observed in the cross-sectional and longitudinal research mentioned earlier, such as positive emotions (Emmons &

McCullough, 2003; Martinez-Marti, Avia & Hernandez-Lloreda, 2010; Ouweneel et al., 2014; Sergeant & Mongrain, 2011) and life satisfaction (Chan, 2013; Emmons & McCullough, 2003, Lambert et al., 2013). They have demonstrated some efficacy to reduce levels of negative affect (Chan, 2013; Emmons & McCullough, 2003, Geraghty, Wood & Hyland, 2010). Despite gratitude having a strong association with the building of social resources, only four studies have investigated the impact of a gratitude diary intervention on pro-social behaviours or pro-social emotions (Emmons & McCullough, 2003; Froh et al., 2008; Lambert et al., 2010; Martinez-Marti et al., 2010). In Emmons and McCullough (2003), participants in the daily gratitude diary intervention were more likely to report that they had offered emotional support compared to two control conditions. Martinez-Marti et al. (2010) largely replicated the methodology of Emmons and McCullough (2003). They also asked participants to rate the quality of their relationship with a significant other, how sensitive they had been to other peoples' needs, and included an observer report of participant's sensitivity to others needs. None of the social outcome measures were significant, however a trend was found for the quality of relationships ( $p = .072$ ) compared to both a hassle diary condition and a neutral diary condition. Froh et al. (2008) measured self-rated pro-social behaviour but did not find any significant outcomes. Finally, Lambert et al. (2010) investigated the impact of a gratitude intervention on communal strength, the sense of responsibility the participant feels for their partner's welfare. The study used a novel intervention and asked participants to increase the frequency that they expressed gratitude to their partner. The results indicated that this intervention yielded significantly higher increases in communal strength compared to paying attention to grateful events or sharing positive events with a partner. No information was reported about the comparison between paying attention to grateful events and sharing positive events, so it is not known if simply paying attention to grateful events had an impact on feelings of communal strength.

There are a number of limitations in the published literature using adult participants that make it difficult to generalise about the effectiveness of gratitude diaries in promoting wellbeing (see Wood et al., 2010). For example, many of the gains were only in relation to a hassle diary, first used in Emmons and McCullough (2003) (e.g. Chan, 2013; Emmons & McCullough, 2003; Froh et al., 2008; Martinez-Marti et al., 2010). It has been argued that the hassle diary is not an effective control group as it is designed to induce negative affect, and therefore it exaggerates the differences between groups (Froh, Miller & Snyder, 2009; Wood et al., 2010). Many studies did not find any significant impact on components of wellbeing such as a reduction in negative affect (e.g. Chan, 2011; Emmons & McCullough, 2003; Flinchbaugh, et al., 2012; Sergeant & Mongrain, 2011). The variation in type, length and frequency of intervention makes it difficult to draw conclusions about the contexts in which interventions are more effective than others. Finally, a manipulation check to ensure that the intervention is effective in increasing gratitude was only administered in the minority of studies (Chan, 2013; Emmons & McCullough, 2003; Martinez-Marti et al., 2010), which limits conclusions as to whether felt gratitude was the mechanism that mediated the observed increase in outcome measures.

The outcomes of gratitude interventions with children and adolescents have also been mixed and suffer from many of the limitations observed in the adult literature. For example, Froh et al. (2008) investigated a gratitude diary intervention with young adolescents aged 11-13 years old. The gratitude diary was effective in eliciting an increase in gratitude and optimism, but only in relation to a hassle diary. There were no significant findings related to social behaviour, positive affect or overall life satisfaction. However, a noteworthy outcome in Froh et al. was that participants in the gratitude diary condition reported a significant increase in school satisfaction compared to the hassle and event diary conditions. These significant effects were maintained at a three-week follow up. This notable increase in school

satisfaction was present despite participants not being asked specifically to write about their school experiences. The authors acknowledged that the lack of a coded analysis of the diary entries to further investigate this effect was a limitation of the study (Froh et al., 2008). Owens and Patterson (2013) also used a gratitude diary intervention, with children aged 5-11 years old. One strength of the study was that the intervention was adapted to reflect the academic skills of the participants and involved drawing pictures of things they were grateful for instead of writing. The study found that the intervention was not effective in eliciting increases in life satisfaction, positive and negative affect or self-esteem compared to a neutral diary or an optimism diary. The authors suggest that the instructions of the gratitude task may have impacted on the effectiveness of the intervention, as it could have led them to focus on immediate or novel experiences, rather than on continuing general experiences or relationships (Owens & Patterson, 2013). The contents of the diaries were analysed in this study, however this hypothesis was not directly investigated. Another limitation of this study was that levels of gratitude were not measured as a manipulation check of the intervention.

A difficulty of using gratitude interventions with children is the lack of a clear evidence base to suggest the developmental trajectory of gratitude and establish at what age the concept of gratitude can be understood. Researchers in the field of gratitude theorise that due to the cognitive complexities of understanding gratitude, such as attributing an external source for a positive outcome, understanding the intentionality of others and empathetic emotions; gratitude is likely to emerge during middle childhood and continues to develop towards adolescence (Froh et al., 2007; Froh, Yurkewicz & Kashdan, 2009b; Nelson et al., 2012; Owens & Patterson, 2013). However, there has been limited empirical evidence to support this. It is argued that in order to generate further research, more studies are needed to validate psychological scales that measure gratitude in children (Froh et al., 2011).

Within the field of positive psychology, there is increasing evidence that individual

differences can contribute to the effectiveness of interventions (Sin & Lyubomirsky, 2009). The literature evaluating gratitude interventions has found that the characteristics of participants may moderate the effectiveness of the intervention. For example, it has been found that trait gratitude and trait positive affect measured pre-intervention has a moderating effect on the gratitude interventions (Chan, 2010; Rash, Matsuba & Prkachin, 2011; Froh et al., 2009a). Froh et al. found that when these moderating factors were taken into account, significant differences were found between the gratitude intervention and the neutral event control group for participants low in both trait gratitude and positive affect. This evidence suggests that gratitude diaries are particularly beneficial for certain groups of people. The current study will explore factors related to participants' gender and eligibility of free school meals (FSM) (an indicator of socio-economic disadvantage), as these factors have been found to affect level of SoSB (Goodenow, 1993; Frederickson et al., 2007). There is not yet any published evidence that specifically investigates the effectiveness of gratitude interventions related to these groups. Emerging research on gender differences in the expression of gratitude suggests that males are less inclined to do this than females (e.g. Kashdan et al., 2009; Thompson, Peura & Gayton, 2015), but only one study examines the impact of gender on gratitude using child aged participants (Froh et al., 2009a). Owen & Patterson (2013) investigated the impact of gender on the content of the gratitude diaries but found no significant association between content and gender. No analysis was reported related to the effectiveness of the intervention in regard to gender differences.

The rationale of this study aims to extend the research which has found an association between gratitude and the building of social resources, such as feelings of connectedness (Froh et al., 2010), pro-social emotions such as forgiveness (McCullough et al., 2001) and trust (Dunn & Schweitzer, 2005), perception of social support (Algoe et al., 2008; Wood et al., 2008) and pro-social behaviour (Froh et al., 2009b). The available evidence suggests that

gratitude diary interventions have the potential to increase pro-social behaviours (Emmons & McCullough, 2003; Froh et al., 2008; Martinez-Marti et al., 2011) and feelings of communal strength towards a partner (Lambert et al., 2010). The current study will expand upon the findings of Froh et al. (2008) and use a school-based intervention that induces participants' feelings of gratitude specifically related to school, and examine whether this can lead to an increased feeling of belonging towards school. We hypothesise that the effect of reflecting on and experiencing gratitude about positive events in school could be a mechanism that enhances participants' SoSB.

Belonging can be considered as a psychological need to form and maintain social bonds (Baumeister & Leary, 1995). Specifically sense of belonging at school involves “*a commitment to school and a belief that school is important. It also includes a positive perception of the teacher-pupil relationship, relationship with peers and opportunities to be involved in school life*” (Prince & Hadwin, 2012, p.7). It is a construct associated with being accepted and valued by others at school (Goodenow, 1993) and associated with many positive outcomes for wellbeing, motivation and academic success (Prince & Hadwin, 2012). Completing the diary could positively influence SoSB because it could lead to an increased awareness of pro-social and positive behaviour from staff and peers, the perception of being supported by others, the strengthening of friendships with peers and an appreciation of positive behaviour from staff. No previous research has investigated the role of gratitude in increasing psychological feelings of belonging. Research on school belonging has shown it is inversely related to school dropout, and linked with engagement and interest in school, positive relationships (Bond et al., 2007), intrinsic motivation and academic achievement (Goodenow, 1993; Osterman, 2000). If the use of gratitude diaries can be shown to cause participants to positively reflect on their school life and induce positive emotions, pro-social behaviour and feelings of connectedness then this could create a positive feedback loop for

positive peer and teacher relationships, which could foster stronger bonds to school (Bono & Froh, 2009).

To counter the limitations discussed of previous studies, a neutral control group rather than a hassle diary group will be used. This approach also reduces ethical concerns over the potential outcomes of asking children to reflect negatively on their school day with the use of a hassle diary. A manipulation check will also be carried out to ensure that the intervention is successful in increasing felt gratitude towards school. Differences between males and females in changes in gratitude and SoSB will be explored.

## **Method**

### **Design**

Participants within each year group were randomly allocated to either a gratitude diary or an event diary condition. Measures of gratitude and SoSB were taken before and the intervention.

### **Participants**

The participants were all from the Key Stage Two (KS2) (year groups 3 to 6, mean age 9 years 4 months) classes of a one-form entry (one class per year group) primary school in Southampton, UK. All four classes in KS2 were included in the study. The head teacher at the school authorised an opt-out consent procedure and every parent was given detailed information about the study and the opportunity to withdraw their child from it; one parent chose to do this. The initial sample consisted of 116 participants. However, participants' data was not included in the analysis if school attendance during the intervention was below 80% for two weeks or more, or less than 40% for one week or more to ensure that all participants were present to write at least 18/20 diary entries. Participants were also excluded

if they were absent on the day of data collection, or if the pattern of their data on the reverse scored items suggested they did not understand the questions. The remaining sample consisted of 100 children (see Table 1).

**Table 1:** Number of participants across year group and condition

	Condition		Total
	Event diary	Gratitude diary	
Year 3	13 (7 males, 6 females)	12 (9 males, 3 females)	25
Year 4	12 (4 males, 8 females)	12 (6 males, 6 females)	24
Year 5	13 (4 males, 9 females)	13 (9 males, 4 females)	26
Year 6	13 (5males, 8 females)	12 (7 males, 5 females)	25
Total	51 (20 males, 31 females)	49 (31 males, 18 females)	100

## Materials

### **The Belonging Scale, (Frederickson & Dunsmuir, 2009)**

The Belonging Scale is designed to measure the extent to which a participant feels a sense of belonging at school and was adapted from the Psychological Sense of School Membership Scale (Goodenow, 1993) to make it suitable for British children and a younger age group. The scale is a 12 item self-report questionnaire containing a three point response scale: ‘no not true’, ‘not sure’ and ‘true’. This adapted questionnaire has been reported to have high alpha reliability and consistency (Frederickson et al., 2007). In the current study, these items formed an index with medium reliability,  $\alpha = .74$ .

### **Gratitude to school questionnaire**

To enable the measurement of gratitude to school, an adapted version of the GQ-6

(McCullough et al., 2002) was used. The GQ-6 is a six-item scale and is designed to measure dispositional gratitude; the questionnaire has demonstrated properties of convergent validity and reliability ( $\alpha = 0.86$ ) and test/retest reliability when used with adults (McCullough et al., 2002). It has also been validated with younger participants aged 10-19 (Froh et al., 2011) and was found to resemble similar properties of reliability and internal consistency ( $\alpha = .88$  for participants aged 10-11 years old). It should however be noted that at ages 7-11 some of our sample was even younger. For the first five questions, the only modification we made was the addition of the word '*school*' to make each question specific to school. Question six was considered to be potentially too abstract for the participants of this age group and was simplified from "*Long amounts of time can go by before I feel grateful to something or someone*" to "*I do not often find myself feeling grateful*". Subsequent analysis justified the inclusion of this item, as the factor loading for the item was high and removal did not improve reliability. Participants rated items on a ten-point rating scale (*1 = strongly disagree, 10 = strongly agree*). In the current study, these items formed an index with medium reliability,  $\alpha = .74$ .

Information was also collected on participants' gender and eligibility of free school meals (FSM) (an indicator of socio-economic disadvantage).

## **Procedure**

The method for the data collection was identical pre and post intervention. Baseline measures were collected two days before the start of the intervention and post-data was collected on the last day of the intervention. Prior to collecting each data set, two of the authors delivered a semi-scripted introduction to each class on the meaning of gratitude and gave instructions on how to fill out the scales on both questionnaires. Questionnaires were administered as a whole class, the Belonging Scale (Frederickson and Dunsmuir, 2009) being

administered first and followed by the adapted gratitude questionnaire. To control for reading difficulties, the researcher read out each question whilst each participant completed their questionnaire.

On the first day of the intervention, the diaries were introduced to the gratitude and event group separately. Participants were not made aware that there were two different groups within each class and the front cover of each diary looked identical, but contained different instructions inside. Teachers were not informed about which students were assigned to each group. Participants in the gratitude condition were given a semi-structured reminder about the concept of gratitude and were each given a diary outlining the definition of gratitude and a daily instruction of “*write down 2 or 3 things that you are thankful or grateful for today at school*”. Participants in the control group were also given a semi-scripted introduction to the task and were given diaries with the instruction “*write down 2 or 3 things that happened in school today*”

The intervention was carried out for ten minutes in the afternoon of every school day (Monday to Friday) for four weeks, resulting in a total number of 20 diary entries. At the end of week one and week two, the researchers did a fidelity check to ensure that the intervention was being carried out. The diaries were also checked at the end of the intervention and it was seen that diaries were completed every day the participant was present at school.

## **Results**

The data set contained no outliers or missing items, and there was no evidence of violation of the assumptions of normal distribution and homogeneity of variance.

There was no significant association between FSM and condition ( $X^2(1) = .63, p = .427$ ), but there was a significantly higher number of females in the control group and males in the

experimental group ( $X^2(1) = 5.78, p = .016$ ).

### Descriptive Statistics

Means and standard deviations of the gratitude and sense of school belonging scores are displayed in table 2.

**Table 2:** Mean (s.d) Gratitude and Sense of School Belonging (SoSB) scores

	Event Diary				Gratitude Diary			
	Female		Male		Female		Male	
Pre-Intervention Gratitude	47.90	(10.67)	44.85	(11.97)	44.50	(12.02)	40.26	(13.33)
Post-intervention Gratitude	45.29	(10.94)	40.45	(13.20)	44.22	(15.16)	42.77	(12.41)
Pre-Intervention SoSB	31.32	(4.12)	27.60	(5.88)	28.11	(4.57)	29.19	(4.36)
Post-intervention SoSB	29.97	(4.51)	27.10	(5.50)	31.22	(3.06)	31.16	(3.52)

### Gratitude

As a manipulation check, the first part of the analysis examined whether the gratitude intervention had a significant effect on level of gratitude to school compared to the control condition.

A 2 (event vs. gratitude) x 2 (pre-intervention vs. post-intervention) x 2 (male vs female) mixed ANOVA was conducted on the gratitude scores. This revealed that there was a significant interaction between the time and condition,  $F(1, 96) = 15.94, p < .001, \eta_p^2 = .14$ , indicating that the change in gratitude scores from pre to post-intervention was significantly different in the gratitude diary group compared to the event group. The three way (time x condition x gender) interaction, while suggesting a trend, was not significant,  $F(1, 96) = 3.91$ ,

$p = .051$ ,  $n_p^2 = .04$ . There was also a significant main effect of time,  $F(1, 96) = 4.25$ ,  $p = .042$ ,  $n_p^2 = .04$ . On average gratitude declined during the study. While simple effects analyses should be interpreted with caution, due to the interaction not being significant (table 3) suggests that there was a decrease in gratitude in the control group irrespective of gender, but that in the gratitude diary group only the males showed an increase in gratitude (although the gratitude diary appeared to have protected the females from any significant decrease in gratitude).

**Table 3:** Mean (s.e.) increase in gratitude (pre-intervention gratitude subtract intervention gratitude), & simple effects analysis of the difference between pre-intervention scores in each group.

Condition	Gender	Mean gratitude increase (s.e.)	$F(1,96)$	$p$
Event diary	Female	-2.613 (1.009)	6.70	.011
	Male	-4.400 (1.257)	12.26	.001
Gratitude diary	Female	-0.278 (1.325)	.044	.834
	Male	2.516 (1.009)	6.22	.014

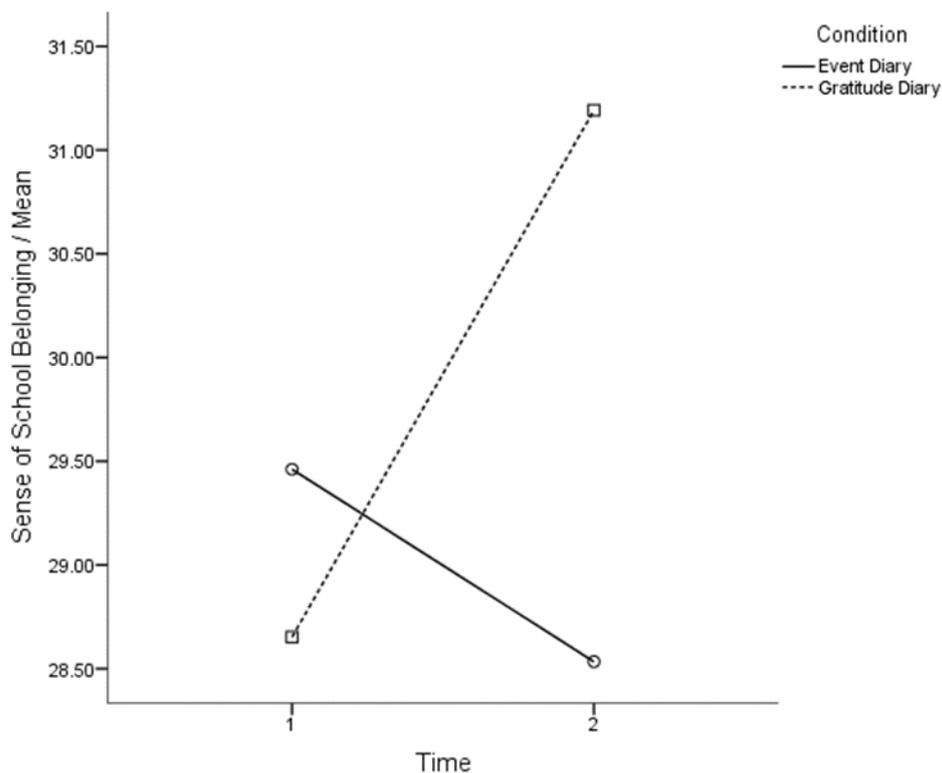
There was no evidence that the three way interaction was driven by pre-existing differences in gratitude, as a 2 x 2 (Gender x Diary) between group ANOVA showed no statistically significant effects (Gender  $F(1,96) = 2.16$ ,  $p = .145$ ; Diary  $F(1,96) = 2.60$ ,  $p = .111$ ; Interaction  $F(1,96) = .057$ ,  $p = .811$ ).

### Sense of School Belonging

As this was the second outcome variable tested, a Bonferroni adjusted critical value of 0.025 ( $\alpha = 0.05 / 2$ ) was used when assessing whether results were significant. A 2 (event vs. gratitude) x 2 (pre-intervention vs post-intervention) x 2 (male vs female) mixed ANOVA was carried out to establish whether type of intervention had an effect on SoSB. There was a

significant interaction between time and type of intervention,  $F(1,96) = 28.30, p < .001, n_p^2 = .23$  (figure 1 #,i). Simple effects analyses found SoSB increased over time (mean increase = 2.54;  $F(1,96) = 29.41, p < .001, n_p^2 = .235$ ) in the gratitude diary group and showed a non-significant decrease (mean increase = -0.927;  $F(1,96) = 4.19, p = .043, n_p^2 = .042$ ) in the control group.

**Figure 1:** Estimated marginal mean Sense of School Belonging (SoSB) scores for the gratitude and event diary groups at time 1=before intervention and time 2=after intervention



There was also a significant main effect of time,  $F(1, 96) = 6.119, p = .015, n_p^2 = .06$ . The condition x gender interaction  $F(1,96) = 4.91, p = .029, n_p^2 = .049$  suggested a trend towards boys in the control group reporting a low sense of school belonging, compared to boys in the gratitude diary group and both groups of girls who had a higher sense of school belonging.

Change scores were calculated by subtracting the pre-intervention scores from the post-intervention scores for both gratitude and sense of school belonging. Increase in gratitude was correlated with increase in sense of school belonging ( $r(100) = .350, p < .001$ ), there was a positive relationship between the degree of change in gratitude and the degree of change in SoSB over the course of the intervention.

## **Discussion**

The present study represents the first to use a gratitude diary intervention that requires children to write specifically about school. There have also only been two published studies to date that have used gratitude diaries with primary school aged children. As predicted, the study found the gratitude diary intervention had a beneficial effect on both gratitude towards school and SoSB. Improvements in gratitude due to the gratitude diary appeared slightly, but not significantly more pronounced in boys. Conversely, the control group who took part in an event diary intervention showed decreases in gratitude and SoSB during the intervention. In support of the notion that changes in gratitude drove the improvement in sense of school belonging, changes in gratitude scores were found to be correlated with changes in SoSB scores.

The results for the gratitude diary condition are consistent with the main hypothesis, that inducing gratitude specific to school will increase students' SoSB. It is also consistent with previous research that has demonstrated positive effects of gratitude diary interventions (e.g. Emmons & McCullough, 2003; Lambert et al., 2013). Specifically, the increase in SoSB is also consistent with outcomes obtained by Froh et al. (2008) who found that a school-based gratitude intervention with adolescents was linked to a significant increase in school satisfaction. To make the results more comparable to Froh et al. (2008), it would have

been useful to conduct a three-week follow up to see if the positive outcomes were maintained. A link between gratitude and feelings of psychological membership has not previously been established in the psychological literature; the current study suggests that the act of reflecting on positive experiences at school and experiencing gratitude towards them is associated with an increase in SoSB. This is a key finding. It should be noted, however, that more research is needed to establish whether it was specifically gratitude that was the psychological mechanism that increased the SoSB: it could be argued that, although the change in gratitude correlated significantly with the change in SoSB score, there were other mechanisms which could have increased participants' SoSB, such as positive affect, pro-social behaviour, positive appraisal of teacher or pupil relationships. These variables could be explored further by adding additional variables pre and post intervention or employing a longitudinal design. In addition, while the gratitude manipulation appeared to protect female pupils from the fall in gratitude observed in the control group, only males showed a significant increase in gratitude scores following the gratitude diary intervention. This was an unexpected finding insofar as the literature on gender differences in the expression of gratitude suggests that males are less inclined to this activity than females (e.g. Kashdan et al., 2009; Thompson et al., 2015). It is possible gratitude was already at ceiling level in the girls in our study, however there was no evidence that baseline levels of gratitude were effected by gender. Most such research, however, has used adult participants. An exception to this is Froh et al.'s (2009b) study of 154 children aged 11 to 13, which found that whilst girls did still tend to report more gratitude, boys appeared to derive greater social benefit from the gratitude they did express when levels of family support were taken into consideration. The current study did not consider the content of participants' diary entries and is therefore unable to comment on the quantity or quality of gratitude expressed, nor the level of enthusiasm for this activity; our finding, however, lends some possible support to the

suggestion that boys might in some ways benefit more from practising gratitude regularly than girls. Further research could examine this in more detail and, if strong evidence emerges to support the notion, consider also whether it remains true of males across the lifespan.

The result of a decrease in SoSB and gratitude in the neutral event diary group was also unexpected. There are several possibilities for why this result occurred. Firstly, despite random allocation to each intervention, there was some indication that the event group had higher mean scores of both gratitude and SoSB at pre-intervention compared to the gratitude group. Secondly, although control participants were asked to write about any event in the school day, they could have chosen to write about negative events, which could have had a negative effect on both gratitude and SoSB. This would make the control group in the current study comparable to the hassle diary in both Emmons & McCullough (2003) and Froh et al. (2008). However, in these studies significant declines were not observed. A coded analysis of diary entries would be needed to establish the content of the diary entries and explore these hypotheses. Finally, the fact that the gratitude diary intervention and the control intervention were occurring in the same classes could have been an issue, if participants became aware that they were in different groups.

It has been suggested that gratitude is a concept that begins to emerge in middle childhood (Froh et al., 2007). The age at which gratitude can be understood is an important consideration when designing gratitude interventions and represents an area for future research. It has been highlighted that there needs to be further validations of scales that measure gratitude in children (Froh et al., 2011). The modified measure used in this study had lower reliability than the validated scale and this could limit the conclusions that can be drawn. To overcome this it would have been useful to conduct a pilot of the questionnaire to establish whether participants understood the questions and if any modifications could have improved its validity.

The study suggests a number of implications for school and educational psychologists, who are well-placed to extend this research and to advise schools and colleges on evidence-based interventions at the level of individual, group, whole class and whole-school implementation. First, gratitude should not be regarded as simply a verbal expression taught to children and reflecting a social politeness, but rather as a psychological mechanism that can promote positive emotions, social wellbeing and, potentially, academic outcomes. Second, the gratitude diary represents a straightforward, low cost and low resource intervention that can be used by school staff to increase pupils' felt gratitude towards school and has the potential to promote school belonging. If this intervention can be shown to promote positive outcomes over the long-term, it has the potential to be a proactive intervention that can support pupils' wellbeing and ability to manage school transitions and other challenges that arise.

Finally, the gratitude diary is an intervention with the potential to be used at the whole-school level as well as class, small group and individual. An important area for future research should be to examine whether a school-wide gratitude diary intervention has a system-wide impact on factors such as pro-social behaviour, SoSB, positive relationships and wellbeing. Emerging evidence suggests that there are benefits of including staff as well as pupils. Gratitude diary interventions have been associated with a reduction in teacher burnout (Chan, 2011, Chan, 2013). It has been suggested that when teachers are coached to increase the frequency in which they express gratitude towards their pupils, it can have a positive impact on the quality of relationships with their pupils (Howells, 2013). Recent research by Lambert et al. (2013) demonstrated that sharing a gratitude diary with a partner is more effective than doing a gratitude diary alone, and a large scale implementation could lend itself well to the regular sharing of selected diary entries with a 'gratitude partner'. This eco-systemic increase in gratitude could establish a positive feedback loop where an

individual's increase in gratitude and positive reflection about school could create a thriving school environment (Bono & Froh, 2009).

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