How 'other people matter' in a classroom-based strengths intervention: Exploring interpersonal strategies and classroom outcomes

Denise M. Quinlan[a], Nicola Swain[b], Claire Cameron[c] & Dianne A. Vella-Brodrick[d]

[a] Educational Assessment Research Unit, University of Otago College of Education,
University of Otago, Dunedin, New Zealand

[b] Department of Psychological Medicine, Dunedin School of Medicine, University of Otago,
Dunedin, New Zealand

[c] Department of Preventive and Social Medicine, Dunedin School of Medicine, University of
Otago, Dunedin, New Zealand

[d] Graduate School of Education, University of Melbourne, Melbourne, Victoria, Australia
Published online: 29 May 2014.

PLEASE SCROLL DOWN FOR ARTICLE

How 'other people matter' in a classroom-based strengths intervention: Exploring interpersonal strategies and classroom outcomes

Denise M. Quinlan[a]*, Nicola Swain[b], Claire Cameron[c] and Dianne A. Vella-Brodrick[d]

[a]*Educational Assessment Research Unit, University of Otago College of Education, University of Otago, Dunedin, New Zealand;* [b]*Department of Psychological Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand;* [c]*Department of Preventive and Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand;* [d]*Graduate School of Education, University of Melbourne, Melbourne, Victoria, Australia*

Interventions that identify and develop character strengths have been shown to benefit well-being, academic engagement and achievement. Strengths research within positive psychology has focused primarily on individual outcomes with less attention on group or relationships effects. This study ($N = 193$) examined the effect of a classroom-based strengths intervention on class cohesion and friction, relatedness, engagement, well-being and strengths use. A six-session programme was trialled with 9–12-year-old students. Students learned to recognise strengths and practised strengths-related goal setting. At three-months post-test, multi-level modelling indicated that intervention group participants scored significantly higher on class cohesion and relatedness need satisfaction, and lower on class friction than the non-randomised control group. Programme participants also reported higher levels of positive affect, classroom engagement, autonomy need satisfaction and strengths use. School-based strengths interventions may influence individual perceptions of class climate, engagement and student relatedness in addition to individual well-being.

Keywords: character strengths; children; engagement; positive affect

Introduction

Identifying and developing strengths has been shown to benefit well-being and achievement in settings ranging from the therapeutic (Cox, 2006; Flückiger, & Grosse, Holtforth, 2008), to educational (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009), and to the workplace (Clifton & Harter, 2003; Minhas, 2010). Strength identification and development has been associated with numerous desirable outcomes including increased subjective and psychological well-being (Govindji & Linley, 2007; Linley, Nielsen, Wood, Gillett, & Biswas-Diener, 2010; Seligman, Steen, Park, & Peterson, 2005), increased engagement and achievement (Clifton & Harter, 2003; Hodges & Clifton, 2004; Seligman et al., 2009), enhanced academic self-efficacy (Austin, 2005) and goal achievement (Linley, Nielsen, et al., 2010).

Within the field of positive psychology, most strengths research has used specific strengths classifications (for a review see Quinlan, Swain, & Vella-Brodrick, 2012). The most widely researched in this field are the Classification of Strengths and Virtues used in the Values in Action (VIA) Inventory of Character Strengths (Peterson & Seligman, 2004), *StrengthsFinder* (Rath, 2007) and Realise 2 (Linley, 2009; Linley, Woolston, & Biswas-Diener, 2009). The VIA was developed to describe universally valued strengths such as courage, honesty, persistence and love.

In contrast, *StrengthsFinder* and Realise 2 were based largely on empirical workplace studies and include strengths that are not necessarily universally valued such as arranger, significance and winning others over (*StrengthsFinder*) and connector, counterpoint and time optimiser (Realise 2).

To enable direct comparison of programmes using these classifications, and to distinguish them from interventions that explicitly target development of a particular strength (e.g. gratitude), strengths interventions have sometimes been defined as interventions to identify and develop *an individual's strengths* [whatever they may be or however they may be described] to promote well-being or other desirable outcomes (Quinlan et al., 2012). While this definition enables comparison of strengths interventions within positive psychology using different strengths classifications, it does not facilitate comparison with a range of programmes that share similar aims and objectives, an issue discussed later in this article. Developed primarily for non-clinical populations, character strengths interventions within positive psychology have been used in the workplace (*StrengthsFinder*; Hodges & Clifton, 2004; and Realise 2; Minhas, 2010), in education (*StrengthsFinder*; Louis, 2008; and the VIA; Proctor, Tsukayama, et al., 2011; Rust, Diessner, & Reade, 2009; Seligman et al., 2009), and with individuals in the

general population (VIA; Mitchell, Stanimirovic, Klein, & Vella-Brodrick, 2009; Seligman et al., 2005). Although character strengths interventions within positive psychology are now being used widely in primary and secondary schools in Australia, the UK and the USA, most research was initially conducted with the general population and university students (Mitchell et al., 2009; Rust et al., 2009; Seligman et al., 2005). Recently, a number of studies have examined the effects of strengths interventions in schools (Gillham, 2011; Proctor, Tsukayama, et al., 2011; Seligman et al., 2009). This increased focus on strengths in schools is welcome as research in this context is sparse particularly with primary school students.

To date character strengths interventions within positive psychology have focused primarily on individual rather than relationship or group outcomes. Studies show that strengths interventions can positively influence well-being and academic performance, however effect sizes have been small (primarily) to moderate (Austin, 2005; Proctor, Tsukayama, et al., 2011; Rashid, 2004; Rust et al., 2009; Seligman et al., 2005, 2009. For a detailed review, see Quinlan et al., 2012). Strengths have largely been treated as individual resources built by an individual for their own benefit. This approach, characterised by one research group as *self-contained individualism* (Hart & Sasso, 2011), raises the question: If other people really matter, why has their impact on strengths interventions not been assessed or utilised to enhance relationships and group morale? Although a number of strengths interventions have described interpersonal strengths discussions or feedback as a part of their procedures (Austin, 2005; Mitchell et al., 2009; Rashid, 2004; Rust et al., 2009), the effects of these interpersonal interactions were not assessed. A number of strengths interventions in school settings have broadened the range of outcomes examined to include inter-personal variables. Two intervention studies have assessed their influence on students' social skills (Gillham, 2011; Rashid et al., 2013). Another school-based strengths programme expanded the range of intervention strategies including recognition of strengths in others (also described as *strengths spotting*) and use of a shared strengths vocabulary (Govindji & Linley, 2008). An exploratory analysis of this programme reported findings of improved student self-confidence, teacher relationships and school climate, suggesting that these strategies warrant further research (Govindji & Linley, 2008).

Beyond the field of positive psychology, and largely pre-dating it, are a range of disciplines using strengths-based approaches or explicitly teaching character development to support positive outcomes for youth including well-being, achievement, character development and self-management, prosocial behviour, and social and relationship competencies. These include positive youth development (PYD; e.g. Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004) and the areas of character education (e.g. Berkowitz & Bier, 2005), prosocial education (e.g. Jennings & Greenberg, 2009; Solomon, Battistich, Watson, Schaps, & Lewis, 2000), and social and emotional learning (e.g. Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011).

Extensive reviews within character education (Berkowitz & Bier, 2005), social and emotional learning (Durlak et al., 2011), and PYD (Catalano et al., 2004) document their effectiveness and the factors associated with effective programmes. These include multi-domain components, family and community participation, promoting a caring community, social skills, self-management and awareness, and problem-solving. More effective programmes within PYD tended to be of longer duration and addressed real-life challenges for the participants (Catalano et al., 2004). There is much for positive psychology research to learn from in the approach of these disciplines to developing programmes for youth. Drawing on insights from this research, the purpose of this study was to examine the effects of a range of intervention strategies on well-being, engagement, relationships and class climate. These strategies included using strengths to tackle students' real-life challenges and goals, working together as a classroom community, recognising strengths in each other and providing new practices and rituals to integrate into class routines.

The practice of noticing strengths in others, or strengths spotting (Linley, Garcea, et al., 2010), was examined for its potential to influence class morale, relationships and learning. When an individual responds actively and constructively to positive news which has been shared with them, relationship satisfaction increases for both the responder and the sharer of the good news (Gable, Reis, Impett, & Asher, 2004). Commenting on an individual's strengths use (strengths spotting) could be considered an active constructive response to noticing that behaviour, and might therefore promote relationship satisfaction. While using one's strengths may enhance well-being, having one's strengths commented upon positively might reinforce and promote further strengths awareness and use. Equally importantly, it might also enhance relationships between those involved.

A significant body of research outside positive psychology has documented the importance of classroom engagement for learning and achievement, and for reducing school dropout rates (Fredricks, Blumenfeld, & Paris, 2004; Furrer & Skinner, 2003; Hattie, 2009; Skinner, Furrer, Marchand, & Kindermann, 2008). Supportive class climates, characterised by high cohesion and low friction, have also been shown to support learning and achievement (Fraser, 1989; Goh, Young, & Fraser, 1995).

Relatedness is the belief or feeling that one is connected to important others and not alienated or isolated (Ryan & Deci, 2000). It has previously been demonstrated to influence individual classroom engagement and perceptions of class climate (Furrer & Skinner, 2003; Skinner et al., 2008). Relatedness is one of three psychological needs (the others are autonomy and competence), satisfaction of which has been shown to support motivation and well-being (Deci & Ryan, 2000; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000) in adults, and children as young as third grade (age 8–9 years; Veronneau, Koestner, & Abela, 2005). It was therefore of interest to determine if a strengths programme focusing on encouraging teacher and peer support (via strengths spotting) would lead to enhanced relatedness and overall intrinsic need satisfaction.

This study tested the hypothesis that a brief, classroom-based character strengths intervention would have beneficial effects on student-perceived class cohesion and friction, relatedness and overall intrinsic need satisfaction, in addition to well-being, engagement and strengths use.

Method

Participants

A convenience sample of nine classroom groups ($N = 196$; 88 female, 108 male) was recruited from one intermediate and five primary schools from a city in the South Island of New Zealand. Students were aged 8–12 years with the majority aged 9–10 years (83%). The majority of students reported their ethnicity as NZ European (68.9%). Students were predominantly from low-to-mid socio-economic groups as defined by a Ministry of Education classification. Schools are assigned to 10 deciles, ranging from 1 (the 10% of NZ schools with the highest proportion of students from low socio-economic backgrounds) to 10 (the 10% of NZ schools with the lowest proportion of students from low socio-economic backgrounds), (Ministry of Education, 2011). Details on gender, age, ethnicity and socio-economic status for intervention and control groups are included in Table 1. Teachers in both the intervention and control groups had all previously received a one-day introductory training in positive psychology provided by the first author, and had completed their own strengths inventories online using the VIA. Although familiar with the VIA classification, none of the teachers had previously conducted specific strengths education with their class.

Measures

All measures were administered to intervention and control group students in the week prior to the strengths programme (pre-test) and in the week three months after programme completion (follow-up).

Affective well-being

The International Positive And Negative Affect Schedule-Short Form (I-PANAS-SF) was used to assess affect. This 10-item adaptation of the PANAS scale (Watson, Clark, & Tellegen, 1988) was selected for use in this study for brevity. The I-PANAS-SF consists of two five-item sub-scales that ask participants to report on the positive (e.g. alert) and negative affect (e.g. afraid) they have experienced in the past week (Thompson, 2007). Items are rated from one (*never*) to five (*always*). Three of the 10 I-PANAS-SF items used were displayed to students with alternatives presented in brackets as synonyms; hostile (angry), inspired (lively) and attentive (paying good attention). Research has demonstrated the validity of the scale and its high correlation (>0.90) with the full form PANAS (Thompson, 2007). Cronbach's alphas for pre-test data in the present study were 0.66 for PA and 0.66 for NA. Inter-item correlations, an alternative assessment of reliability for brief scales, were 0.28 for both PA and NA, within the recommended limits for reliability (0.2–0.4; Briggs & Cheek, 1986).

Life satisfaction

The Students' Life Satisfaction Scale (SLSS) was used to assess global life satisfaction (Huebner, 1991a, 1991b). The SLSS is suitable for use with children from eight years upwards and consists of seven items (e.g. 'My life is just right'), rated from one (strongly *disagree*) to six (strongly *agree*). Research has demonstrated that the SLSS scores are reliable and valid (Huebner, 1991a, 1991b). For pre-test data in the current study, Cronbach's alpha was 0.82.

Classroom engagement

The student report of the Engagement Versus Disaffection with Learning measure was used to assess behavioural and emotional engagement and disaffection of students (Wellborn, 1991; Skinner, Kindermann, & Furrer, 2009). The 20-item student report comprises four sub-scales (behavioural engagement, behavioural disaffection, emotional engagement and emotional disaffection) each containing five items that assess engagement (e.g. 'I pay attention in class') and disaffection (e.g. 'When I'm in class my mind wanders') during classroom learning activities. Items are rated from one (not *at all true*) to four (very *true*), (Skinner et al., 2009). Research has demonstrated that the Engagement and Disaffection report scores are reliable and valid (Skinner et al., 2008, 2009). For the pre-test data in this study, Cronbach's

Table 1.   Overview for students of the Awesome Us six-session strengths programme.

Awesome Us programme components (six sessions)

Session 1: Learning to recognise strengths in oneself	• How to spot people using strengths – we are engaged and alive • Activity: create a Collage of 'Me at My Best' and notice where you have been using strengths • Discuss and name the Activity Strengths displayed
Session 2: Learning more about your activity strengths	• Activity: '3 Rolled Into 1' – design a new activity that uses strengths you have identified in your favourite sport, hobby, or subject • Name the activity strengths you have used • Identify where else you could use these strengths in your day
Session 3: How character strengths support your activity strengths	• Introduction to character strengths and how we all use them to perform our activity strengths • Linking your activity strengths to character strengths • Identifying more of your character strengths
Session 4: Learning more about your character strengths	• Discuss your character strengths with friend • Counting up our class character strengths • Using strengths to deal with a personal challenge • Design a strengths superhero
Session 5: How will you use your strengths to make a difference?	• What's the point of strengths? We use them to help with things that matter to us • Setting goals that matter to you and sticking to them • Set a personal goal and select strengths to support your goal pursuit • Create goal reminders
Session 6: Using strengths in our relationships	• Why friendship is important to us all • What's good and what's tough about friendship • Setting a friendship goal that matters to you • Create a personal strength poster/shield that shows the strengths you most enjoy using and where you use them

alphas were 0.87 for total engagement (behavioural and emotional) and 0.82 for total disaffection (behavioural and emotional).

Class cohesion and friction

The My Class Inventory (MCI), developed specifically for use in primary schools, (Elementary schools) is designed to assess class climate (Fisher & Fraser, 1981; Fraser, 1982). For brevity, only two of the five subscales (cohesion and friction) were used in this study. Items are presented as statements (e.g. 'In my class everybody is my friend') to which respondents answer *yes* (scoring 3 points) or *no* (1 point). Scores for the cohesion subscale ranged from 6 to 18, and from 8 to 24 for friction, with higher scores reflecting greater cohesion and friction. These two sub-scales of the full MCI have been shown

to measure distinct concepts, with a negative correlation of $r = -0.41$, (Fisher & Fraser, 1981). Research has demonstrated some support for the reliability and critierion validity of the MCI scale (Fisher & Fraser, 1981). Cronbach's alphas for pre-test data in this study were 0.64 for the cohesion sub-scale and 0.74 for the friction sub-scale. Mean inter-item correlation for the six-item cohesion sub-scale was within satisfactory limits at 0.24 and 0.26 for the eight-item friction sub-scale.

Intrinsic need satisfaction

The 18-item Children's Intrinsic Needs Satisfaction Scale (CINSS; Koestner & Véronneau, 2001), adapted from the Intrinsic Needs Satisfaction Scale (Deci et al., 2001), was used to assess aspects of intrinsic need satisfaction. This scale is comprised of three sub-scales (autonomy,

competence and relatedness) with six items per sub-scale (e.g. 'My teachers like me and care about me'). Items are rated from one (*not true for me*) to three (*very true for me*). Research has demonstrated that the CINSS scores are reliable and valid (Veronneau et al., 2005). Cronbach's alphas at pre-test in this study were 0.85 for the full scale, 0.73 for competence, 0.69 for autonomy and 0.68 and relatedness. Mean inter-item correlations for the six-item sub-scales reporting alphas below 0.70 were within acceptable limits at 0.27 for autonomy and 0.26 for relatedness.

Strengths use

The 14-item Strengths Use Scale was used to assess strengths use (Govindji & Linley, 2007). Items (e.g. 'I always play to my strengths') were rated from one (strongly *disagree*) to seven (strongly *agree*). One item that asked about work was modified to read *school gives me lots of opportunities to use my strengths*. Research with adults has demonstrated that the Strengths Use scale scores are valid and reliable (Govindji & Linley, 2007; Proctor, Maltby, & Linley, 2011). Cronbach's alpha for the pre-test data in this study was 0.93.

Procedure

Ethical approval for the study was obtained from the University of Otago's Ethics Committee. The six schools that agreed to participate in the study provided nine classroom groups. Three schools had only one class group at the Year 5/6-year level. Each school wished to have a classroom group in the intervention group and as a result, random assignment of classes was not possible. One class from each of the six schools was assigned to the intervention group ($n = 140$), while a further three classes from three of the schools were assigned to the control group ($n = 56$). Assignment to condition was not random within schools that had two classrooms as school principals nominated class groups to condition, in one case to expose a teacher who was not supportive of positive psychology to the programme. Students and their caregivers all provided written consent to take part in the study. Only three students refused consent for the intervention and continued study in another class at the same year level, while the programme was delivered to a full class group during normal school time. To encourage survey completion, a voucher for NZ$150 was awarded to the class that had the highest percentage of survey completion, with a further NZ$150 voucher for their teacher.

Questionnaires administration

Students completed questionnaires online using computers at school, at pre-test and at follow-up three months post-programme completion. A member of the research was available throughout the process to provide reading assistance or clarification of instructions as required.

Delivery of the intervention

The Awesome Us strengths programme was delivered to students in six weekly sessions of 90 min with a further review session a month later. The strengths programme was delivered by the first author, with the classroom teacher and another teacher acting as facilitators during small group exercises. All sessions were digitally recorded. The programme was developing following consultation with teachers and students, then piloted and revised based on teacher and student feedback. A brief description of each session for student participants is included in Table 1. In each session, students discussed current events from a strengths perspective, noting, for example, the strengths they believed the Chilean miners or earthquake victims in New Zealand would need to use to cope in their situations. Students also discussed the strengths they had noticed in themselves and others since the previous session. A popular part of the programme was watching funny, touching or outrageous video clips and identifying the strengths in subjects as diverse as lion cubs, injured robots, wheelchair extreme sportspeople, base jumpers and basketball teams. Students learned that each person can bring a different perspective to strengths use, and that using strengths is a part of daily life.

Overview of the analysis

Analysis of missing data using separate variance t-tests and Little's MCAR test did not indicate any systematic patterns of missing data. A very small number of outlying scores were examined against the full range of responses for each participant, determined to be legitimate data and retained for analysis. A data-set of $n = 193$ was available for analysis. Survey completion was very high at over 95% at follow-up.

A mixed linear model (Brown & Prescott, 2006) was used to analyse the data to allow for non-independent observations within classrooms (and schools); school and classroom levels were included as random effects. Ten models were used, one for each of the outcome variables: positive affect, negative affect, student life satisfaction, classroom engagement, class cohesion and friction, relatedness, autonomy and competence need satisfaction, and strengths use. Each model included a fixed effect for the baseline measure, gender, age, school year level and SES. Gender was coded as girl = 0 and boy = 1. Effect sizes (Cohen's d) have been calculated for group differences in each outcome variable at follow-up (Cohen, 1988) using the intervention model coefficients and pooled standard deviation for each outcome.

Results

Descriptive statistics

Group differences in personal characteristics were examined and subsequent analyses controlled for all variables that differed at pre-test. ANOVA analysis was used for continuous variables (e.g. age) and Pearson χ^2 analyses for nominal variables (e.g. gender), with Yates Continuity Correction where analysis was in a 2X2 format. Mean scores, standard deviations and reliability coefficients were calculated for each of the study variables. Analyses, presented in Table 2, showed that participants in the intervention and control groups differed on age and year group, but not on gender or ethnicity. Intervention group participants were slightly younger than control participants and the groups also differed on their school socio-economic status (as measured by school decile rating where 1 is lowest and 10 highest). These analyses reflect the non-random assignment of classes to condition.

Descriptive statistics of the study variables

Mean scores and standard deviations for the study variables are presented in Table 3. Mean scores indicated no

significant differences between the intervention and control groups at pre-test on any of the study variables. Scores were within expected ranges for age and gender.

Pearson product correlation coefficients (zero-order correlations) among the study variables at pre-test and follow-up are provided in Table 4. Bivariate correlations were in the expected directions with the strongest correlations between the sub-scales of intrinsic need satisfaction and between relatedness and competence and both strengths use and engagement. Notable changes in correlations at follow-up included an increase in the correlation between positive affect and both engagement and strengths use, and between relatedness and engagement.

Analysis of group differences

The results of the mixed linear model analyses for each of the outcome variables are presented in Tables 5 through 14. In all models, school and classroom factors were considered as random effects and gender, age, year and school SES were treated as fixed effects. These models indicate that students in the intervention group on average reported significantly higher positive affect than those in the control group (a difference of 0.34, equivalent to an effect size of $d = 0.48$) when pre-test

Table 2. Demographic data for intervention and control group participants.

Demographic details	Intervention ($n = 140$)		Control ($n = 56$)		Difference between groups[a]
	n	%	n	%	
Gender					χ^2 (1, $n = 193$) = 0.54, $p = 0.462$
Females	65	46.4	23	41.1	
Males	75	53.6	33	58.9	
Age (as at 1 February 2011):					F (1, 76) = 4.75, $p = 0.032$
8 years	3	2.1	–	–	
9 years	46	32.9	21	37.5	
10 years	77	55.0	18	32.1	
11 years	7	5.0	6	10.7	
12 years	7	5.0	11	19.6	
Mean (SD)	9.78 (0.787)		10.13 (1.13)		
School year					χ^2 (1, $n = 193$) = 9.70, $p = 0.002$
Year 5–6	121	87.7	37	67.3	
Year 7–8	17	12.3	18	32.7	
*Ethnicity**					NZE: χ^2 (1, $n = 163$) = 2.61, $p = 0.106$
NZ European	102	72.9	33	58.9	
Maori	20	14.3	6	10.7	
Pacific Island	6	4.3	6	10.7	
Asian	3	2.1	2	3.6	
Other	5	3.6	4	7.1	Other: χ^2 (1, $n = 163$) = 0.662, $p = 0.416$
No response	21	15.0	10	17.9	
School SES					χ^2 (3, $n = 193$) = 26.04, $p = 0.000$
1–3	60	42.9	42	75.0	
4–5	47	33.6	–	–	
6–8	33	23	14	25.0	
9–10	–	–	–	–	

*Totals do not equal 100% (140 or 56) as respondents can select more than one ethnicity.
[a]Groups differences calculated using Chi-square for categoric variables and ANOVA analysis for continuous variables. Categories of New Zealand European and Other were used to calculate ethnicity differences as numbers were too small to calculate for each ethnic group. As categories were not mutually exclusive, Chi-squares were calculated for each category.

Table 3. Descriptive statistics for study variables.

	Intervention group				Control group			
	Pre-test		Follow-up		Pre-test		Follow-up	
Measure (range)	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)
Positive affect (5–25)	137	16.58 (4.20)	136	17.82 (3.45)	55	17.29 (3.86)	53	16.34 (4.09)
Negative affect (5–25)	137	11.47 (3.55)	136	11.81 (3.55)	55	11.56 (3.35)	53	11.11 (3.40)
Student life satisfaction (6–42)	137	31.81 (7.31)	136	33.08 (7.04)	55	30.62 (8.00)	53	32.53 (6.51)
Classroom engagement (%30 to +30)	117	13.79 (9.62)	134	14.93 (9.99)	48	11.63 (11.12)	53	10.62 (10.94)
Class cohesion (6–18)	133	10.87 (3.24)	136	10.74 (3.48)	55	10.18 (3.32)	53	9.70 (3.41)
Class friction (8–24)	136	17.49 (4.02)	136	17.06 (4.15)	52	17.65 (4.07)	53	18.98 (3.73)
Relatedness need satisfaction (6–18)	137	16.07 (1.79)	136	15.99 (1.95)	55	15.58 (2.13)	53	14.85 (2.57)
Autonomy need satisfaction (6–18)	137	14.29 (2.60)	136	14.58 (2.65)	55	14.13 (2.87)	53	14.08 (2.44)
Competence need satisfaction (6–18)	137	15.58 (2.21)	136	15.99 (2.23)	55	15.29 (2.19)	53	15.36 (2.37)
Strengths use (14–98)	126	76.05 (17.36)	134	76.96 (18.71)	52	74.44 (18.38)	53	69.06 (20.60)

Note: n = participant numbers.

Table 4. Pearson product correlation coefficients for study group at pre-test and follow-up.

	1	2	3	4	5	6	7	8	9	10
Pre-test										
1. Positive affect	–	0.085	0.173*	0.253**	0.067	−0.035	0.235**	0.183*	0.234**	0.258**
2. Negative affect		–	−0.276**	−0.263**	−0.009	0.204**	0.001	0.070	−0.131	−0.150*
3. Student life satisfaction			–	0.359**	0.127	−0.159*	0.296**	0.174*	0.345**	0.437**
4. Classroom engagement				–	0.219**	−0.433**	0.498**	0.307**	0.629**	0.458**
5. Class cohesion subscale					–	−0.346**	0.269**	0.170*	0.182*	0.132
6. Class friction subscale						–	−0.237**	−0.021	−0.189**	−0.063
7. Relatedness need satisfaction							–	0.415**	0.710**	0.464**
8. Autonomy need satisfaction								–	0.530**	0.474**
9. Competence need satisfaction									–	0.648**
10. Strengths Use										–
Follow-up										
1. Positive affect	–	0.119	0.195**	0.491**	0.128	−0.042	0.402**	0.302**	0.399**	0.534**
2. Negative affect		–	−0.334**	−0.089	−0.14	0.192**	−0.064	−0.142	−0.129	−0.081
3. Student life satisfaction			–	0.383**	0.216**	−0.170*	0.362**	0.239**	0.407**	0.334**
4. Classroom engagement				–	0.297**	−0.271**	0.656**	0.413**	0.618**	0.540**
5. Class cohesion subscale					–	−0.475**	0.296**	0.279**	0.321**	0.243**
6. Class friction subscale						–	−0.271**	−0.096	−0.202**	−0.101
7. Relatedness need satisfaction							–	0.564**	0.718**	0.598**
8. Autonomy need satisfaction								–	0.592**	0.496**
9. Competence need satisfaction									–	0.597**
10. Strengths use										–

Note: Data excluded pairwise. n = 154–192 at pre-test, 186–189 at follow-up.
*Correlation is significant at $p < 0.05$ (2-tailed).
**Correlation is significant at $p < 0.001$ (2-tailed).

positive affect, gender, age, school year and SES were taken into account. No significant group differences were found in either negative affect or student life satisfaction. The intervention group scored higher on the measures of classroom engagement ($d = 0.36$) and class cohesion ($d = 0.32$), and lower on class friction ($d = 0.44$) than the control group. No significant difference was found in competence need satisfaction, but the intervention group students reported a greater sense of relatedness ($d = 0.45$) and autonomy need satisfaction ($d = 0.36$) than the control group. Student reports of strengths use were also higher among intervention group students than the control group ($d = 0.32$).

Discussion

The results of this study were consistent with the hypothesis that a brief, classroom-based strengths intervention would enhance well-being and engagement, and students' perceptions of class cohesion and friction. This study also provides preliminary evidence that a strengths intervention using a range of strategies can support

Table 5. MLM results for the effect of intervention on positive affect, controlling for baseline positive affect, gender, age, school SES, and year.

Positive affect at follow-up	Coef	Std. Err.	z	P > |z|	95% CI	
Intervention	1.777	0.587	3.03	0.002	0.627	2.927
Pre-test positive affect	0.349	0.060	5.78	0.000	0.231	0.468
Gender	−0.815	0.489	−1.67	0.095	−1.772	0.142
Age	−0.016	0.433	−0.03	0.979	−0.860	0.836
School year	−1.021	1.089	−0.94	0.348	−3.155	1.113
School SES						
4	−0.662	0.832	−0.80	0.426	−2.93	0.969
5	−0.864	0.862	−1.00	0.316	−2.553	0.825
8	0.222	0.637	0.35	0.727	−1.026	1.470
Constant	11.154	4.220	–	–	–	–

Note: Pre-test measures of positive affect, gender, age, year, and school SES were included as fixed effects. Classroom and school were entered as random parameters.

Table 6. MLM results for the effect of intervention on negative affect, controlling for baseline negative affect, gender, age, school SES, and year.

Negative affect at follow-up	Coef	Std. Err.	z	P > |z|	95% CI	
Intervention	0.635	0.542	1.17	0.241	−0.427	1.697
Pre-test negative affect	0.440	0.065	6.73	0.000	0.312	0.569
Gender	−0.841	0.457	−1.84	0.066	−1.738	0.055
Age	−0.026	0.405	−0.06	0.949	−0.819	0.767
School year	1.146	1.015	1.13	0.259	−0.844	3.136
School SES						
4	0.942	0.778	1.21	0.226	−0.582	2.467
5	0.200	0.801	0.25	0.803	−1.369	1.770
8	0.071	0.599	0.12	0.905	−1.103	1.245
Constant	6.470	3.981	–	–	–	–

Note: Pre-test measures of negative affect, gender, age, year, and school SES were included as fixed effects. Classroom and school were entered as random parameters.

Table 7. MLM results for the effect of intervention on student life satisfaction, controlling for pre-test student life satisfaction, gender, age, school SES, and year.

Relatedness need satisfaction at follow-up	Coef	Std. Err.	z	P > |z|	95% CI	
Intervention	0.683	0.985	0.69	0.488	−1.246	2.613
Pre-test student life satisfaction	0.475	0.056	8.46	0.000	0.365	0.585
Gender	−0.791	0.833	−0.95	0.343	−2.424	0.843
Age	0.458	0.735	0.62	0.534	−0.983	1.899
School year	−1.795	1.848	−0.97	0.331	−5.417	1.827
School SES						
4	−3.884	1.411	−2.75	0.006	−6.651	−1.118
5	0.744	1.447	0.51	0.607	−2.093	3.581
8	−2.091	1.084	−1.87	0.062	−4.145	0.103
Constant	14.631	7.330	–	–	–	–

Note: Pre-test measure of student life satisfaction, age, gender, year, and school SES were included as fixed effects. Classroom and school were entered as random parameters.

students' sense of relatedness and autonomy, both important elements of intrinsic motivation. These reported changes were accompanied by higher reports of strengths use among the intervention group compared to the control group. Findings also suggest that strengths-related interaction and feedback may constitute useful intervention strategies in addition to individual strength development and use.

Table 8. MLM results for the effect of intervention on classroom engagement, controlling for baseline classroom engagement, gender, age, school SES, and year.

Classroom engagement at follow-up	Coef	Std. Err.	z	P > |z|	95% CI	
Intervention	3.779	1.384	2.73	0.006	1.066	6.492
Pre-test classroom engagement	0.600	0.066	9.06	0.000	0.470	0.730
Gender	−1.856	1.263	−1.47	0.142	−4.330	0.619
Age	0.806	1.054	0.76	0.444	−1.259	2.870
School year	−3.781	2.789	−1.36	0.175	−9.248	1.685
School SES						
4	−4.606	2.059	−2.24	0.025	−8.641	−0.571
5	−1.088	2.087	−0.52	0.602	−5.179	3.003
8	0.179	1.535	0.12	0.907	−2.829	3.187
Constant	−2.408	10.127	−	−	−	−

Note: Pre-test measures of classroom engagement, gender, age, year, and school SES were included as fixed effects. Classroom and school were entered as random parameters.

Table 9. MLM results for the effect of intervention on class cohesion, controlling for baseline class cohesion, gender, age, school SES, and year.

Class cohesion at follow-up	Coef	Std. Err.	z	P > |z|	95% CI	
Intervention	1.112	0.501	2.22	0.027	0.129	2.094
Pre-test class cohesion	0.440	0.065	6.80	0.000	0.313	0.566
Gender	−0.877	0.426	−2.06	0.039	−1.712	−0.042
Age	0.154	0.375	0.41	0.682	−0.581	0.888
School year	−2.449	0.942	−2.60	0.009	−4.296	−0.602
School SES						
4	−2.638	0.738	−3.57	0.000	−4.084	−1.192
5	−1.361	0.738	−1.84	0.065	−2.808	0.087
8	−1.957	0.560	−3.50	0.000	−3.054	−0.860
Constant	5.292	3.643	−	−	−	−

Note: Pre-test measures of class cohesion, gender, age, year, and school SES were included as fixed effects. Classroom and school were entered as random parameters.

Table 10. MLM results for the effect of intervention on class friction, controlling for baseline class friction, gender, age, school SES, and year.

Class friction at follow-up	Coef	Std. Err.	z	P > |z|	95% CI	
Intervention	−1.808	0.678	−2.67	0.008	−3.136	−0.480
Pre-test class friction	0.440	0.061	7.22	0.000	0.321	0.560
Gender	0.996	0.476	2.09	0.036	0.063	1.928
Age	−0.597	0.419	−1.43	0.154	−1.418	0.224
School year	4.315	1.139	3.79	0.000	2.082	6.547
School SES						
4	3.265	0.984	3.32	0.001	1.336	5.194
5	0.322	1.000	0.32	0.747	−1.637	2.282
8	1.780	0.767	2.32	0.020	0.277	3.283
Constant	14.947	4.017	−	−	−	−

Note: Pre-test measures of class friction, gender, age, year, and school SES were included as fixed effects. Classroom and school were entered as random parameters.

Subjective well-being differences in this study occurred solely in the measure of positive affect, while both negative affect and life satisfaction remained stable. Well-being can be enhanced by either reducing negative emotion or increasing positive emotion, or by increasing one's cognitive evaluation of life satisfaction (Diener, 1994). In this study, positive emotion increased with no significant change in negative affect; a pattern consistent

Table 11.   MLM results for the effect of intervention on relatedness need satisfaction, controlling for baseline relatedness need satis-faction, gender, age, school SES, and year.

Relatedness need satisfaction at follow-up	Coef	Std. Err.	z	P > |z|	95% CI	
Intervention	0.988	0.302	3.27	0.001	0.396	1.580
Pre-test relatedness need satisfaction	0.570	0.070	8.11	0.000	0.432	0.708
Gender	−0.666	0.263	−2.53	0.011	−1.182	−0.151
Age	−0.030	0.225	−0.13	0.895	−0.472	0.412
School year	−0.433	0.569	−0.76	0.446	−1.548	0.681
School SE						
4	−1.377	0.432	−3.19	0.001	−2.224	−0.530
5	−0.208	0.450	−0.46	0.645	−1.089	0.674
8	−0.327	0.333	−0.98	0.326	−0.979	0.325
Constant	6.887	2.465	–	–	–	–

Note: Pre-test measure of relatedness need satisfaction, age, gender, year, and school SES were included as fixed effects. Classroom and school were entered as random parameters.

Table 12.   MLM results for the effect of intervention on autonomy need satisfaction, controlling for baseline autonomy need satisfac-tion, gender, age, school SES, and year.

Autonomy need satisfaction at follow-up	Coef	Std. Err.	z	P > |z|	95% CI	
Intervention	0.931	0.401	2.32	0.020	0.145	1.716
Pre-test autonomy need satisfaction	0.382	0.069	5.54	0.000	0.247	0.518
Gender	−0.317	0.347	−0.91	0.361	−0.997	0.363
Age	−0.108	0.302	−0.36	0.721	−0.700	0.484
School year	1.016	0.753	1.35	0.177	−0.459	2.492
School SES						
4	−1.662	0.577	−2.88	0.004	−2.794	−0.530
5	−0.224	0.589	−0.38	0.704	−1.378	0.931
8	−0.067	0.441	−0.15	0.879	−0.931	0.797
Constant	9.620	2.924	–	–	–	–

Note: Pre-test measures of autonomy need satisfaction, gender, age, year, and school SES were included as fixed effects. Classroom and school were entered as random parameters.

Table 13.   MLM results for the effect of intervention on competence need satisfaction, controlling for baseline competence need satisfaction, gender, age, school SES, and year.

Competence need satisfaction at follow-up	Coef	Std. Err.	z	P > |z|	95% CI	
Intervention	0.656	0.354	1.85	0.064	−0.038	1.351
Pre-test competence need satisfaction	0.415	0.071	5.86	0.000	0.276	0.554
Gender	−0.552	0.307	−1.80	0.072	−1.155	0.050
Age	−0.057	0.265	−0.22	0.828	−0.577	0.462
School year	0.025	0.670	0.04	0.970	−1.286	1.337
School SES						
4	−0.725	0.510	−1.42	0.156	−1.725	0.276
5	−0.453	0.524	−0.87	0.387	−1.480	0.573
8	−0.188	0.392	−0.48	0.632	−0.956	0.581
Constant	9.956	2.728	–	–	–	–

Note: Pre-test measures of competence need satisfaction, gender, age, year, and school SES were included as fixed effects. Classroom and school were entered as random parameters.

with Wood, Linley, Maltby, Kashdan, and Hurling (2011) finding that strengths use led to increased positive affect but no reduction in negative affect. Research in adults has demonstrated that while income predicts

evaluative measures of well-being, fulfilment of social and psychological needs is a stronger predictor of posi-tive feelings (Diener, Ng, Harter, & Arora, 2010). The Awesome Us strengths programme did not alter students'

Table 14. MLM results for the effect of intervention on strengths use, controlling for baseline strengths use, gender, age, school SES, and year.

Strengths use at follow-up	Coef	Std. Err.	z	$P > \lvert z \rvert$	95% CI	
Intervention	6.211	3.064	2.03	0.043	0.206	12.217
Pre-test strengths use	0.555	0.076	7.28	0.000	0.406	0.704
Gender	−6.305	2.609	−2.42	0.016	−11.418	−1.192
Age	−1.230	2.293	−0.54	0.592	−5.723	3.264
School year	1.513	5.772	0.26	0.793	−9.800	12.825
School SES						
4	1.717	4.507	0.38	0.703	−7.116	10.550
5	−0.498	4.564	−0.11	0.913	−9.443	8.448
8	−1.792	3.440	−0.52	0.602	−8.535	4.950
Constant	43.531	22.132	–	–	–	–

Note: Pre-test measures of strengths use, gender, age, year, and school SES were included as fixed effects. Classroom and school were entered as random parameters.

material conditions, but increases in relatedness may have enhanced their sense of psychosocial prosperity, thus offering one possible explanation for the change in positive affect and not life satisfaction.

Students who participated in Awesome Us reversed the usual trend of falling levels of engagement through the school year (Furrer & Skinner, 2003; Skinner et al., 2009). An intervention that can prevent engagement levels falling across the school year is of immediate relevance to schools. Students who participated in Awesome Us reported experiencing fairly stable levels of cohesion and friction in their classroom, while cohesion declined and friction increased in the control group. Given the range of influences on class cohesion and friction (e.g. peer relationships, student–teacher interactions and school culture), it is notable that a significant difference was observed.

Group differences in intrinsic need satisfaction were concentrated in the relatedness and autonomy need satisfaction sub-scales at follow-up, while competence need satisfaction remained unchanged. Relatedness is an important predictor of classroom engagement and subsequently, academic performance, and consequently of particular relevance in a school setting (Furrer & Skinner, 2003). Consistent with findings that using strengths rather than merely identifying them was associated with well-being changes (Seligman et al., 2005) and that strengths use predicted positive affect (Wood et al., 2011), Awesome Us participants reported significantly higher strengths use at follow-up than the control group.

Study limitations

An important limitation of this study, and one faced by many school-based studies, was that it was not possible to randomly assign classes to intervention or control conditions. In addition, assignment was at the class level (rather than individual student) while analyses focused on effects at the individual student level and thus may overestimate

the intervention effects. Furthermore, the intervention and control groups were of unequal size, with a smaller number of classes in the control group. Given this and the fact that the study was powered to detect only moderate effect sizes, caution must be exercised in interpreting these results as both Type I and Type II errors are possible. Brief self-report measures were selected to reduce the response burden on young participants. Future research should include more objective measures or assessments by outside observers blind to study condition. A limited number of intervention leaders participated in the programme; more work is needed with larger numbers of teachers. A longer follow-up period than the three months in this study will be required to determine if group differences are long-lasting.

The time and attention provided to intervention group participants, and the focus on positive aspects of the self, have been identified as potential confounds in this study. Research has indicated that once expectancy of change and accessing positive information about the self are controlled for, certain strengths interventions may not outperform a placebo, suggesting that these factors are instrumental in producing effects rather than the strengths aspect per se (Mongrain & Anselmo Matthews, 2012). Future research should consider the use of a positive placebo control condition that encourages participants to access positive aspects of the self and provides equal time and attention to the intervention group. A group-focused intervention could also be compared to an individual strengths intervention to gauge the extent to which the group environment contributes to the intervention effects.

Strengths of the study

This study provides preliminary evidence that strengths interventions can influence desirable classroom as well as individual outcomes. It extends strengths research to

primary school students. It also provides preliminary evidence that a range of strategies including strengths spotting and using strengths to pursue personal goals can be used as part of a strengths intervention. The findings of enhanced class cohesion and reduced friction provide an additional rationale for schools to adopt a strengths approach.

The effect sizes from this study were small for most outcome variables similar to other evaluations of strengths interventions within positive psychology (Quinlan et al., 2012). However, positive affect and relatedness effect sizes were moderate: moderate- to large-sized effects have also been reported in some strengths interventions for teacher- and parent-reported social skills changes in students in the same age group as this study (Rashid et al., 2013).

Conclusion

This study suggests that a strengths intervention encouraging students to notice and affirm strengths in each other, and to use strengths to pursue personal goals among other strategies may have benefits for classroom relationships and well-being. As a range of strategies were used in this study, it is not possible to determine how each strategy contributed to effects. School-based strengths interventions may influence individual perceptions of class climate, engagement and student relatedness in addition to individual well-being. Given the importance of relatedness for educational engagement and achievement, the potential of strengths programmes to enhance student–teacher and peer relationships warrants further attention using more robust research designs.

References

Austin, D. (2005). *The effects of a strengths development intervention program upon the self-perceptions of students' academic abilities*. Azusa, CA: Azusa Pacific University.

Berkowitz, M. W., & Bier, M. C. (2005). *What works in character education: A research-driven guide for educators*. St. Louis, MO: Character Education Partnership.

Briggs, S. R., & Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality, 54*, 106–148.

Brown, H., & Prescott, R. (2006). *Applied mixed models in medicine* (2nd ed.). Hoboken, NJ: Wiley.

Catalano, R., Berglund, M., Ryan, J., Lonczak, H., & Hawkins, J. (2004). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *The Annals of the American Academy of Political and Social Science, 591*, 98–124.

Clifton, D., & Harter, J. (2003). Investing in strengths. In A. K. S. Cameron, J. E. Dutton, & C. R. E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 111–121). San Francisco, CA: Berrett-Koehler.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. New York, NY: Lawrence Erlbaum.

Cox, K. (2006). Investigating the impact of strength-based assessment on youth with emotional or behavioral disorders. *Journal of Child and Family Studies, 15*, 278–292.

Deci, E., & Ryan, R. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268.

Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). *Instrinsic need satisfaction scale*. Questionnaire: University of Rochester, NY, USA.

Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research, 31*, 103–157.

Diener, E., Ng, W., Harter, J., & Arora, R. (2010). Wealth and happiness across the world: Material prosperity predicts life evaluation, whereas psychosocial prosperity predicts positive feeling. *Journal of Personality and Social Psychology, 99*, 52–61.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*, 405–432.

Fisher, D. L., & Fraser, B. J. (1981). Validity and use of the my class inventory. *Science Education, 65*, 145–156.

Flückiger, C., & Grosse Holtforth, M. (2008). Focusing the therapist's attention on the patient's strengths: A preliminary study to foster a mechanism of change in outpatient psychotherapy. *Journal of Clinical Psychology, 64*, 876–890.

Fraser, B. J. (1982). *Assessment of learning environments: Manual for learning environment inventory (LEI) and my class inventory (MCI)* (3rd version) [Technical Manual]. South Bentley: Western Australian Institute of Technology.

Fraser, B. J. (1989). Twenty years of classroom climate work: Progress and prospect. *Journal of Curriculum Studies, 21*, 307–327.

Fredricks, J., Blumenfeld, P., & Paris, A. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*, 59–109.

Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology, 95*, 148–162.

Gable, S., Reis, H., Impett, E., & Asher, E. (2004). What do you do when things go right? The intrapersonal and interpersonal benefits of sharing positive events. *Journal of personality and social psychology, 87*, 228–245.

Gillham, J. (2011, July 23–26). *Positive psychology in schools: 3 year follow-up*. Paper presented at the World Congress on Positive Psychology, Philadelphia.

Goh, S. C., Young, D. J., & Fraser, B. J. (1995). Psychosocial climate and student outcomes in elementary mathematics classrooms: A multilevel analysis. *The Journal of Experimental Education, 64*, 29–40.

Govindji, R., & Linley, P. (2007). Strengths use, self-concordance and well-being: Implications for strengths coaching and coaching psychologists. *International Coaching Psychology Review, 2*, 143–153.

Govindji, R., & Linley, P. (2008). *An evaluation of celebrating strengths* (Report prepared for North Lincolnshire Local Education Authority). Coventry, UK.

Hart, K. E., & Sasso, T. (2011). Mapping the contours of contemporary positive psychology. *Canadian Psychology/Psychologie canadienne, 52*, 82–92.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Abingdon: Routledge.

Hodges, T. D., & Clifton, D. O. (2004). Strengths-based development in practice. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 256–268). Hoboken, NJ: Wiley.

Huebner, E. S. (1991a). Further validation of the students' life satisfaction scale: The independence of satisfaction and affect ratings. *Journal of Psychoeducational Assessment, 9*, 363–368.

Huebner, E. S. (1991b). Initial development of the student's life satisfaction scale. *School Psychology International, 12*, 231–240.

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

Koestner, R., & Véronneau, M. (2001). *Children's intrinsic needs satisfaction scale* (Unpublished questionnaire). McGill University, Montreal, Quebec, Canada.

Linley, P. (2009). *Realise2: Technical report*. Coventry: CAPP Press.

Linley, P. A., Garcea, N., Hill, J., Minhas, G., Trenier, E., & Willars, J. (2010). Strengthspotting in coaching: Conceptualisation and development of the Strengthspotting scale. *International Coaching Psychology Review, 5*, 165–176.

Linley, P. A., Nielsen, K. M., Wood, A. M., Gillett, R., & Biswas-Diener, R. (2010). Using signature strengths in pursuit of goals: Effects on goal progress, need satisfaction, and well-being, and implications for coaching psychologists. *International Coaching Psychology Review, 5*, 8–17.

Linley, P. A., Woolston, L., & Biswas-Diener, R. (2009). Strengths coaching with leaders. *International Coaching Psychology Review, 4*, 37–48.

Louis, M. C. (2008). *A comparative analysis of the effectiveness of strengths-based curricula in promoting first-year college student success*. Azusa, CA: Azusa Pacific University.

Minhas, G. (2010). Developing realised and unrealised strengths: Implications for engagement, self-esteem, life satisfaction and well-being. *Assessment and Development Matters, 2*, 12–16.

Ministry of Education, N. Z. (2011). *New Zealand education*. Retrieved from http://www.minedu.govt.nz/NZEducation/EducationPolicies/Schools/SchoolOperations/Resourcing/ResourcingHandbook/Chapter1/DecileRatings.aspx

Mitchell, J., Stanimirovic, R., Klein, B., & Vella-Brodrick, D. (2009). A randomised controlled trial of a self-guided internet intervention promoting well-being. *Computers in Human Behavior, 25*, 749–760.

Mongrain, M., & Anselmo-Matthews, T. (2012). Do positive psychology exercises work? A replication of Seligman et al. *Journal of Clinical Psychology, 68*, 382–389.

Peterson, C., & Seligman, M. (2004). *Character strengths and virtues: A handbook and classification*. New York, NY: Oxford University Press.

Proctor, C., Maltby, J., & Linley, P. A. (2011). Strengths use as a predictor of well-being and health-related quality of life. *Journal of Happiness Studies, 12*, 153–169.

Proctor, C., Tsukayama, E., Wood, A. M., Maltby, J., Eades, J. F., & Linley, P. A. (2011). Strengths gym: The impact of a character strengths-based intervention on the life satisfaction and well-being of adolescents. *The Journal of Positive Psychology, 6*, 377–388.

Quinlan, D., Swain, N., & Vella-Brodrick, D. A. (2012). Character strengths interventions: Building on what we know for improved outcomes. *Journal of Happiness Studies, 13*, 1145–1163.

Rashid, T. (2004). Enhancing strengths through the teaching of positive psychology. *Dissertation Abstracts International, 64*, 6339.

Rashid, T., Anjum, A., Lennox, C., Quinlan, D., Niemiec, R., Mayerson, D., & Kazemi, F. (2013). Assessment of character strengths in children and adolescents. In C. Proctor & P. A. Linley (Eds.), *Research, applications, and interventions for children and adolescents* (pp. 81–115). The Netherlands: Springer.

Rath, T. (2007). *StrengthsFinder 2.0.* New York, NY: Gallup Press.

Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin, 26*, 419–435.

Rust, T., Diessner, R., & Reade, L. (2009). Strengths only or strengths and relative weaknesses? A preliminary study. *The Journal of Psychology, 143*, 465–476.

Ryan, R., & Deci, E. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*, 54–67.

Seligman, M. E. P., Ernst, R. M., Gillham, J., Reivich, K., & Linkins, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford Review of Education, 35*, 293–311.

Seligman, M., Steen, T., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*, 410–421.

Skinner, E., Furrer, C., Marchand, G., & Kindermann, T. (2008). Engagement and disaffection in the classroom: Part of a larger motivational dynamic? *Journal of Educational Psychology, 100*, 765–781.

Skinner, E., Kindermann, T., & Furrer, C. (2009). A motivational perspective on engagement and disaffection: Conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement, 69*, 493–525.

Solomon, D., Battistich, V., Watson, M., Schaps, E., & Lewis, C. (2000). A six-district study of educational change: Direct and mediated effects of the child development project. *Social Psychology of Education, 4*, 3–51.

Thompson, E. R. (2007). Development and validation of an internationally reliable short-form of the positive and negative affect schedule (PANAS). *Journal of Cross-Cultural Psychology, 38*, 227–242.

Veronneau, M.-H., Koestner, R. F., & Abela, J. R. Z. (2005). Intrinsic need satisfaction and well-being in children and adolescents: An application of the self-determination theory. *Journal of Social & Clinical Psychology, 24*, 280–292.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070.

Wellborn, J. G. (1991). *Engaged and disaffected action: The conceptualization and measurement of motivation in the academic domain* (Unpublished doctoral dissertation). University of Rochester, New York.

Wood, A. M., Linley, P. A., Maltby, J., Kashdan, T. B., & Hurling, R. (2011). Using personal and psychological strengths leads to increases in well-being over time: A longitudinal study and the development of the strengths use questionnaire. *Personality and Individual Differences, 50*, 15–19.