Awesome Us: the Individual, Group and Contextual Effects of a Strengths Intervention in the Classroom

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Abstract

The beneficial effects of strengths interventions on individual well-being, academic engagement, efficacy, and achievement have been demonstrated. However, research has not yet examined whether or not strengths interventions can enhance relationships and group climate, or if contextual factors influence intervention effectiveness. Furthermore, although strengths programmes are being used in schools internationally, no published research documents their effectiveness with primary school students or examines the student experience of strengths identification.

Method. This study (N = 193) developed and trialled a 6-session, classroom-based strengths programme, called Awesome Us, with 9-12 year old students from primary and intermediate schools of low to middle socio-economic status, using quantitative and qualitative methods. Students identified their strengths through interactive activities, practised strengths spotting in self and others, and used strengths to pursue meaningful personal goals. How teachers valued strengths in their classrooms, and their attitudes towards strengths were assessed.

Results. Results indicated that the Awesome Us strengths programme had group and individual effects. At 3-months post-test, students who received the programme reported significantly higher levels of positive affect, classroom engagement, class climate, relatedness, and strengths use than those in the control group. No significant differences in negative affect, or life satisfaction were evident. Analysis of teacher data showed significant differences in strengths orientation between intervention and control groups from pre-test to post-test. Hierarchical regressions indicated that a positive change in teacher strengths orientation over the study period contributed significantly to positive changes in student positive affect, engagement, class climate, and relatedness. Qualitative findings indicated
that although all students owned and valued some strengths, strengths use was largely unconscious and automatic. Strengths spotting appeared to play a role in raising awareness of strengths use and building relatedness among those involved.

**Discussion.** These findings provide preliminary evidence for the effectiveness of a strengths intervention with children as young as 9 years of age, and support for the intervention strategies of strengths spotting and using strengths to pursue meaningful personal goals. This study also expands the potential application of strengths in schools to include relationship building and developing supportive learning environments. The finding that student outcomes were influenced by the change in teacher attitudes towards strengths provides important evidence that contextual factors can influence the benefits produced by a strengths intervention. This study suggests that strengths programmes have the potential to provide a universal intervention that can enhance relatedness, engagement, and well-being, and promote a positive learning environment in schools. To achieve these potential benefits, however, may require the commitment of teachers cognisant of the important role they play in promoting strengths use and development in their students.
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CHAPTER 1: Introduction

Research on strengths and their effects has grown in the past decade (Biswas-Diener, Kashdan, & Minhas, 2011; Hart & Sasso, 2011; Seligman & Csikszentmihalyi, 2000; Seligman, et al., 2005). 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 education (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009), and 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, et al., 2010). Despite these advances, it is not yet known, for example, if strengths interventions could produce other desirable outcomes such as enhancing relationships or group climate, if strengths interventions could be made more effective, or if findings can be generalised to populations other than those specifically studied.

A diverse range of strengths-based approaches are being applied to promote youth well-being and achievement in education (Jimerson, Sharkey, Nyborg, & Furlong, 2004; Morris, 2009; Seligman, et al., 2009; Smith, Reid, & Jones, 2010), social welfare (Huang, Stroul, Friedman, Mrazek, Friesen, Pires, & Mayberg, 2005), and youth development (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004). Some disciplines such as career counselling and youth development have adopted open-ended approaches to identifying strengths (Forster, 1992) or have created broad-ranging categories of developmental assets.
Others have created specific strengths classifications (Peterson & Seligman, 2004; Rath, 2007) and programmes have been produced to identify and develop those strengths (Clifton, Anderson, & Laurie, 2006; Reivich, Seligman, Gillham, Linkins, Peterson, Duckworth, & Geraghty, 2003). Strengths programmes are being implemented in schools with students as young as five years old (A. Walker, personal communication, July 19, 2012), although there is only limited evidence of programme effectiveness with high school students, and no published studies involving primary school students. The focus of this thesis is the development and trial of a strengths intervention designed specifically for primary and intermediate school students.

This thesis is organised in 9 chapters. Chapter 1 provides a brief overview of the thesis structure and content. Chapter 2 reviews the definitions and classifications of strengths currently used in strengths research, along with the different origins and objectives of these classifications. The meaning of the umbrella term “strengths approach” is also examined in relation to the differences contained within it. Differences include how strengths are defined; whether they are viewed as innate or malleable, and morally valued or neutral; and the underlying theory and approach to strengths development. The benefits and drawbacks of these classifications for use with young people in schools are discussed.

In Chapter 3, existing research on strengths interventions is critically reviewed, focusing on the effectiveness of these interventions, their strategies, duration, outcomes measured, populations studied, and the lessons that can be drawn for future research. Research relevant to the development of strengths programmes for schools is also briefly reviewed. Specifically, existing research on classroom influences on youth well-being and engagement is discussed as well as insights from other research areas which have successfully developed sustained health-related behavioural change, particularly for youth.
Chapter 3 concludes by setting out the rationale for the intervention and objectives of this thesis. The aim of this study was to develop and trial a strengths intervention that used a novel approach to identifying and developing strengths in children aged 9-12 years (Years 5-8 in New Zealand), a younger age group than has been investigated in previous published studies. Among the study objectives was to determine if a strengths intervention could have group as well as individual effects in addition to enhancing well-being.

The method used for a quantitative part of the study is set out in Chapter 4, and describes the participants, measures and procedure used in the strengths intervention. Chapter 5 provides more expanded detail of the development and pilot of the strengths programme. Students and teachers from six primary and intermediate schools participated in the study. Students were assessed on well-being, engagement, class climate, intrinsic need satisfaction and strengths use. Teachers were assessed on well-being, strengths use, strengths orientation (attitudes and behaviours towards strengths), and their value ranking for strengths in the classroom. The procedure used to deliver the intervention is described.

Chapter 5 details the development of the strengths programme, called Awesome Us, and describes how research findings described in Chapter 3 were incorporated into the intervention. The intervention development process, which included student and teacher focus groups to inform the design, and a pilot of the strengths programme, is explained. Finally, a detailed description of the intervention delivered to participants is included.

The results of a quantitative analysis of the intervention are presented in Chapters 6 and 7. The analytical strategy adopted, and analysis of differences between the study’s intervention and control groups on well-being, classroom engagement, class climate, relatedness, competence, autonomy, and strengths use are detailed in Chapter 6. Post-hoc exploratory analyses conducted to examine the influence of school on student outcomes are
also described. Student and teacher feedback on the programme was obtained and these findings are also presented and discussed.

Findings on the effect of the programme on teachers, and the influence of contextual factors (teacher well-being, strengths use, and strengths orientation) on student outcomes are presented in Chapter 7. Analysis of teacher group differences were undertaken and hierarchical regressions were performed on a number of student outcomes to determine if teacher variables had contributed significantly to these outcomes.

In addition, a qualitative study was conducted to supplement the quantitative study, providing classroom-based evidence of the programme’s effects. This study explored the student experience of learning about and using strengths, and the teachers’ perspectives of working with strengths and of programme effects in the classroom. The results of this study, which used the general inductive approach to analyse in-depth, individual interviews with 10 teachers and six students, are presented in chapter 8. The implications of these findings for schools and for future research are considered.

A general discussion of the findings of this study is presented in Chapter 9. This includes the potential for use of a broader range of strategies and assessment measures in strengths interventions, the importance of contextual factors and the role of strengths spotting, and the need for clarification of implicit strengths theories when undertaking strengths research. Study strengths and limitations, and implications for future research and use of strengths programmes in schools are also discussed.
CHAPTER 2: Differences in Strengths Definitions and Classifications

Chapter Overview

“Strengths philosophy” and strengths approach are umbrella terms used within positive psychology, education, social welfare, and positive organisation scholarship. They describe the shared philosophy of focusing on what is right with an individual or group, namely their strengths, and helping that individual or group apply those strengths for success or well-being (Aspinwall & Staudinger, 2003; Clifton & Harter, 2003; Huang, et al., 2005; Seligman, et al., 2009). This chapter reviews how strengths are defined and the differences between four strengths classifications with regard to their origins and objectives, underlying strengths philosophy, and approach to strengths development. The influence of context on strengths use and well-being is discussed. The advantages and limitations of these classifications for use in schools are considered.

Strengths Definitions and Classifications

In order to develop a strengths intervention specifically for primary and intermediate school students, an important first step was to clarify how strengths would be defined and to examine the suitability for classroom use of a number of different strengths classifications. The term “strength” is in common usage, and accordingly comes with many definitions and interpretations. Dictionary definitions of strength include vigour and power, mental force and moral power or firmness (Merriam-Webster, 2011). Strengths definitions within psychology exhibit a similar range, with some defining strengths as morally valued (i.e., a strength is valued as a worthwhile quality or behaviour by a society or group) whereas others focus more on the vigour and energy associated with strengths use. Psychological strengths have been broadly defined as ways of behaving, thinking or feeling, and for which an individual has a natural capacity, enjoys doing, and which allow the individual to achieve optimal functioning
in the pursuit of valued outcomes (Govindji & Linley, 2007; Linley & Harrington, 2006). This broad definition permits inclusion of strengths not specified by a particular classification. It does not hypothesise a moral outcome of strengths use (i.e., that it should be used for *good*), but does stipulate that use of a strength is enjoyable. An even broader recent definition describes personal strengths as “the characteristics of a person that allow them to perform well or at their personal best” (Wood, Linley, Maltby, Kashdan, & Hurling, 2011, p. 15) and includes “personal, physical and psychological strengths”. This definition is also agnostic as to whether or not a strength, or the outcomes of its use, are morally valued, and allows for measurement of non-specified strengths use. Broad definitions permit strengths to be assessed within any strengths classification or as defined by research participants. However, these broad definitions may also obscure important differences among strengths classifications in terms of how strengths are defined and thought to operate, their views of strengths acquisition and development, and the purpose or intended use of the classification. These differences will be discussed in the following section.

The underlying notion behind strengths identification and classification models is that identifying and developing one’s strengths is beneficial for the individual and will support engagement, achievement, or well-being, although there are differences in how each classification is defined and thought to work. The four most widely used strengths classifications are the Values in Action (VIA) Inventory of Character Strengths (Peterson & Seligman, 2004), *StrengthsFinder* (Rath, 2007), Realise2 (Linley, 2009; Linley, Woolston, & Biswas-Diener, 2009), and the Virtues Project (Popov, 2000). Table 2.1 describes how strengths are defined in each classification, including whether strengths are defined as innate or malleable, and morally valued or neutral. Table 2.1 also indicates the number of strengths,
### Table 2.1

**Comparing Strengths Classifications**

<table>
<thead>
<tr>
<th>Classification: Category:</th>
<th>VIA Inventory of Character Strengths</th>
<th>Clifton <em>StrengthsFinder</em></th>
<th>Realise2</th>
<th>The Virtues Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of strengths</td>
<td>24</td>
<td>34</td>
<td>60</td>
<td>52</td>
</tr>
<tr>
<td>Definition of strengths</td>
<td>Malleable traits that are fulfilling to use and contribute to living a virtuous life. Signature strengths are strengths which an individual feels compelled to use and enjoys using.</td>
<td>Talents are ways of thinking, feeling or behaving that can be productively applied. Strengths are well-developed talents that produce excellence.</td>
<td>“the things that we are good at and that give us energy when we are using them” (Linley, 2009, p.2).</td>
<td>Behaviours or traits common to all successful cultures or civilisations.</td>
</tr>
<tr>
<td>Innate or malleable</td>
<td>All strengths are malleable and influenced by settings. It is unclear if signature strengths can be acquired, or if they are innate (<em>the real me, yearn to use it</em>).</td>
<td>Talents that lead to strengths are innate.</td>
<td>Implication is that strengths are innate; non-strengths can become learned behaviours but not strengths.</td>
<td>All virtues are malleable.</td>
</tr>
<tr>
<td>Morally valued (i.e. strengths are also values) or neutral</td>
<td>An explicit classification of morally valued strengths (although humour and zest not historically or morally valued).</td>
<td>No moral value attached to any strength.</td>
<td>Moral value not addressed explicitly. Blend of VIA and <em>StrengthsFinder</em>-type strengths; some morally valued, others not.</td>
<td>Morally valued.</td>
</tr>
<tr>
<td>Strengths philosophy and development approach</td>
<td>Using strengths is engaging and fulfilling and supports well-being. Individuals should use and develop their strengths (rather than weaknesses or lesser strengths) to enhance well-being.</td>
<td>Using talents/strengths leads to high performance and achievement. Individuals should develop their talents into strengths and not work on weaknesses.</td>
<td>Performance ability and energy are derived from strengths use. Choice to develop strengths or weaknesses is encouraged. Only unrealised strengths can become realised strengths.</td>
<td>By modelling the virtues and using the virtues language, adults will inculcate them in children. All of the virtues should be developed in an individual.</td>
</tr>
<tr>
<td>Strengths and limitations for a school setting</td>
<td>Language is easily recognised in most settings. Strengths easily align with school values. A Youth version of the VIA for 12-17 year olds is available. Factor analysis shows strengths do not load on to the six virtue categories. Not clear if signature strengths are viewed as innate or malleable.</td>
<td>Clear focus on achievement and satisfaction. A youth strengths programme using the 34 talent themes is available. Language may not be as easily recognised as VIA. Effects on well-being rather than achievement not clearly demonstrated.</td>
<td>Classifies respondent’s “strengths” into realised and unrealised strengths, learned behaviours and weaknesses. Encourages choice of which strengths or weaknesses to develop. Developed for adult workplace; not clear if suitable for students or other settings.</td>
<td>Clear objectives and method; all virtues should be developed by modelling and language use to promote virtuous living. Does not allow for development of individual strengths preferences.</td>
</tr>
</tbody>
</table>
origins and objectives, underlying philosophy and strengths development approach, and potential strengths and limitations of each classification. Two other approaches to strengths classification are the Dependable Strengths Articulation Process (DSAP; Forster, 1991, 1992; Forster & Schwartz, 1994), and the Affinities Program (Fox, 2008). The DSAP adopts an open-ended approach, asking participants to identify and label their strengths from past positive experiences, while the Affinities Program uses a strength classification based on Gardner’s (2003) multiple intelligences and distinguishes between activity, relationship and learning strengths (Fox, 2008). Although the DSAP and Affinities approaches are of interest, neither has been scientifically evaluated in a controlled trial and so only very limited research evidence of their effectiveness is available. The categories and strengths used in each of the aforementioned classifications are included in Appendix A.

**Differences in Origins, Objectives, Strengths Philosophy, and Development Approach**

*StrengthsFinder* and Realise2 share similar origins and objectives; based on empirical workplace studies and workplace observations of strengths or talents displayed, they are designed to support success with well-being being a by-product rather than the primary goal. Strengths-based development programmes using *StrengthsFinder* have been designed for a range of occupations including education, and have been reported, in non-peer reviewed publications, to improve employee engagement and productivity, including student achievement, and also well-being (Hodges & Clifton, 2004). In contrast the VIA Inventory of Character Strengths and the Virtues Project are based on valued strengths and promote virtuous behaviour and well-being, to varying degrees, as their objectives. Both *StrengthsFinder* and the VIA share a definitional hypothesis that working on one’s strengths rather than one’s weaknesses produces greater benefits for the individual and they encourage identification of an individual’s top five or signature strengths (Clifton & Harter, 2003; Peterson & Seligman, 2004). In contrast, the Virtues Project seeks to promote virtuous
behaviour and well-being by encouraging use of all the virtues (Popov, 2000) and Realise2 promotes development of strengths, but also acknowledges that developing weaknesses may sometimes be appropriate (CAPP, 2012).

Although differences in the origins and objectives of these strengths classifications are widely acknowledged, little attention has been paid to distinguishing them according to their view of strengths acquisition (innate or malleable), whether or not they are morally valued (i.e., the strengths are valued as inherently good things to do, and so also function as values), or the approach they adopt to strengths development. Considered together, these factors highlight fundamental differences between the classifications and influence how they are implemented. Three distinct strengths approaches can be identified from these strengths classifications. These approaches are not always clearly articulated and are often subsumed under the umbrella term strengths approach. They specify that:

1. an individual should develop their own strengths as these will be more readily and effectively developed than weaknesses and will more directly lead to well-being and success; or,

2. all the strengths or virtues are morally valuable and all should be developed. No particular cluster of strengths is accorded special priority, all are encouraged; or

3. certain strengths most strongly predict desirable outcomes, whether they be well-being, achievement or being a “good” citizen, student, or family member, and that these strengths can be deliberately and explicitly encouraged in target groups.

Classifications that do not include strengths which are also values (e.g., StrengthsFinder), and that view strengths as innate, can more easily, logically and consistently reflect the first strengths approach outlined above. If one is born with talents or strengths which are not morally valued (such as the StrengthsFinder talents of individualisation, winning others over, or intellection), then there should be no social or
workplace pressure to develop certain strengths. Louis (2008) specifically identifies the StrengthsFinder view of strengths as innate or inborn as an important difference between it and the VIA. The StrengthsFinder view is that talents are innate, that individuals prefer to use their talents, and are unlikely to develop strengths that they literally have no talent for. Therefore, the most productive strategy is to assist an individual to leverage their talents and develop strategies to manage a lack of talent in other areas (Louis, 2008).

In contrast to this approach of developing an individual’s innate strengths, classifications whose strengths are also values such as the VIA or the Virtues Project can adopt a number of strengths development approaches which have not always been explicitly acknowledged. Both these classifications clearly state that the strengths or virtues they contain are included because they are valued, in most cases morally. Twenty two of the 24 VIA strengths have been morally valued over time; the contemporary additions of humour and enthusiasm, while not morally valued, are socially valued (Peterson & Seligman, 2004). Both the VIA and the Virtues Project also subscribe to a view that strengths or virtues can be developed. However, it is unclear if the VIA classification asserts that an individual can develop new signature strengths or just further develop existing signature strengths and enhance or ameliorate lesser strengths or weaknesses. The question is, if strengths are malleable and valued, then which ones should be developed?

Classifications whose strengths are also values should, in theory, reflect the view that all of the strengths or virtues should be developed in order to lead a good life; and indeed, the Virtues Project espouses this approach. The approach of developing one’s own strengths as a personal pathway to well-being and a good life, is the explicit strategy claimed for the VIA classification. This can be considered equivalent to developing an individual’s innate strengths. Nevertheless, in practice, an approach that encourages developing the individual’s innate strengths and developing the group’s valued strengths may sometimes be adopted.
There is an understandable desire on the part of employers, teachers, parents and researchers, to identify the strengths that most predict achievement and well-being. One US school has created a short list of strengths that they believe will best support well-being and achievement (Tough, 2011). That school explicitly targets development of those strengths and has created behavioural indicators against which students’ progress is reported, in addition to encouraging development of the student’s own strengths (T. Brunzell, personal communication, July 24, 2012). This is an example of explicit, simultaneous development of an individual’s innate strengths and the group’s valued strengths. However, this dual track approach to strengths development is more likely to be implicit in schools (or workplaces).

In schools or workplaces, individuals may officially be encouraged to develop their own strengths, but in practice, specific strengths that are closely aligned with school or organisation values and mission may receive most attention, encouragement and acknowledgement. It is possible that the simultaneous use of the individual innate strengths development and the group valued strengths development approaches will often occur, due to the overlap between strengths and values in classifications such as the VIA.

**When Strengths are Also Values, Context Matters**

The VIA classification has deliberately included strengths which are valued; its full name described the strengths as “Values in Action”. Thus, these universally valued strengths are also values. Values have been defined by Schwartz and Bilsky (1987, p. 551) as “(a) concepts or beliefs, (b) about desirable end states or behaviours, (c) that transcend specific situations, (d) guide selection or evaluation of behaviour and events, and (e) are ordered by relative importance”. Values are beliefs that guide behaviour, and it becomes difficult if not impossible to disentangle values in action from strengths. However, unlike strengths, values are held in hierarchies; they are “ordered by importance relative to one another” (Schwartz, 2006, p. 249). Groups whether societies, workplaces, families or schools, have their own
hierarchy of values which they observe and inculcate in their members (Schwartz & Sagiv, 1995). This has implications for which strengths are most highly valued and encouraged. As Schwartz (2006, p. 139) comments, “Cultural value emphases shape and justify individual and group beliefs, actions, and goals. Institutional arrangements and policies, norms, and everyday practices express underlying cultural value emphases in societies”.

Schwartz’s (2006) research suggests that when a group prioritises a particular value, the group will endorse and promote that value, and presumably the strength and behaviours associated with it. In any group setting, some VIA strengths also serve as values, and it is therefore to be expected that these strengths will be inculcated or promoted to group members. Therefore, although group members may be encouraged to develop their own strengths, those which the group most highly values may also be promoted. This process is likely to be implicit rather than explicit, and its implications for individual strengths development and well-being have not been studied.

In contrast to the VIA, strengths classifications such as Realise2 do not specify a moral outcome (i.e., living a virtuous life) through use of the strengths, but this does not mean that this classification does not contain strengths that also function as values. Realise2, is in a number of respects, a hybrid. Although its definition of strengths does not refer to strengths being morally valued, Realise2 does include both strengths which are morally neutral (e.g., scribe, narrator, or bounceback) and those which also function as values (e.g., courage, gratitude, judgement, and humility). This means that in a particular context, use of certain strengths may receive more recognition or praise, or be valued more highly than other strengths. In addition to developing strengths, users of Realise2 are also encouraged to decide if they should also work on weaknesses; this decision may be influenced by the value placed on certain strengths in the workplace.
Regardless of which strengths classification is used, context may influence the development of strengths and the association of particular strengths with positive outcomes such as well-being. One illustration of how context can influence outcomes comes from Diener, Tay, and Myers’ study of the association between religious practice and well-being (2011). Diener, Tay et al. (2011) found that religious people living within highly religious nations experienced heightened well-being in contrast to religious people living in a secular country, where the association was less strong. Similarly, the influence of social support and self-esteem on life satisfaction has been shown to differ across different cultures (Diener, Oishi, & Lucas, 2011).

Aspinwall and Staudinger have identified the importance of contextual factors in strengths development and called for research on this subject: “The identification of particular developmental, material, and social contexts that promote or debilitate human strengths thus should be an important focus in a psychology of human strengths” (2003, p.14). The influence of context on the effectiveness of interventions using strengths to enhance well-being or other outcomes has not yet been studied.

**Strengths and Limitations of the Classifications in a School Setting**

The strengths and limitations of different strengths classifications cannot be considered without reference to their intended application; in this case, for use with young students in a school setting. The principal advantage of the VIA classification and the Virtues Project are that their language is easily recognised in a school setting and the strengths or virtues easily aligned with common school values that schools wish to teach and promote. However, the Virtues Project does not encourage identification or development of individual strengths, which for many schools is the primary objective of implementing a strengths approach. Schools could use the VIA classification to encourage development of students’ individual strengths, and to some extent, also promote the school’s valued strengths.
Previous strengths research has not identified the possibility of two approaches to strengths development occurring within a single strengths programme, and consequently, the effects of such an approach on individual well-being have not been studied.

Factor analyses indicate that the VIA strengths do not load onto the six virtue categories to which they have been assigned in the classification (wisdom and knowledge, humanity, justice, transcendence, courage, and temperance; Brdar & Kashdan, 2009; Macdonald, Bore, & Munro, 2008; Shryack, Steger, Krueger, & Kallie, 2010). Therefore, development of particular strengths cannot be assumed to build the specific virtue that a strength has been assigned to.

Although both StrengthsFinder and Realise2 promote personal satisfaction and well-being through performance and achievement, they are based on strengths identified in the workplace. Programmes promoting academic success and leadership development based on the StrengthsFinder classification have been developed for high school and university students, and 10-14 year olds (Clifton Strengths School, 2012). However, the language of the StrengthsFinder and Realise2 classifications may not be readily recognised in schools, and the strengths used in these classifications may not align closely with school values.

**Summary**

Broad definitions of strengths include common elements such as what is good or right within an individual, and the activities they enjoy and find energising to do. However most strengths research uses one of four strengths classifications and these differ in important ways. Their different origins and objectives mean that certain classifications and approaches are likely to be more suited to particular settings and objectives. For example StrengthsFinder and Realise2 were developed in the workplace and are therefore more likely to suit workplace interventions designed to improve performance and personal satisfaction. The VIA and Virtues Project include morally valued strengths and so may be more
appropriate where an intervention’s objectives include developing character. Another important difference between the classifications is their approach to strengths development. Different classifications can be used to promote development of all strengths (The Virtues Project), an individual’s innate strengths (StrengthsFinder), a group’s valued strengths (The VIA when used to promote strengths associated with achievement), or a combination of individual’s innate and group’s valued strengths (The VIA and possibly Realise2, because it promotes the choice of developing strengths or weaknesses, thus working with both innate strengths and those that an individual may value but not possess).

Where strengths are viewed as malleable and are morally valued, certain strengths may be accorded greater priority or value in different contexts. In these circumstances it is possible that context will influence the effect of strengths use and development on well-being. Schools in particular may deliberately choose to adopt a classification of morally valued strengths that can be aligned with school values, with the explicit aim of developing students’ strengths and also promoting school values. The choice of which strengths classification to use in an intervention should consider how a particular classification aligns with the aims and objectives of the intervention, the needs of the participant group, and the values of the organisational setting.
CHAPTER 3: The Research Evidence for a School-Based Strengths Programme

Chapter Overview

This chapter examines the research evidence from existing strengths interventions and considers the lessons for future strengths programmes. This part of the chapter was previously published as Quinlan, Swain, and Vella-Brodrick (2012). In addition, other research relevant to and informing school-based interventions is considered namely, well-being and engagement influences at school, potential contextual influences on strengths interventions, and lessons from other well-being focused behavioural change interventions.

A Review of Strengths Interventions

Strengths interventions, typically designed to increase well-being or personal achievement through the identification and development of strengths, have been in use for over 60 years (Forster, 1991). Older interventions tended to involve self-identification and labelling of strengths (Forster, 1991). More recently, however, the strengths classifications discussed in the previous chapter have been developed to assist with strengths identification (Linley, et al., 2009; Peterson & Seligman, 2004; Popov, 2000; Rath, 2007) and these now form the basis for a range of strengths interventions used across vocational and educational settings.

Developed primarily for non-clinical populations, strengths interventions using classifications have been used in the workplace (StrengthsFinder and Realise2; Hodges & Clifton, 2004; Minhas, 2010), in education (StrengthsFinder and the VIA; Louis, 2008; Rust, Diessner, & Reade, 2009), and with individuals in the general population (VIA; Mitchell, Stanimirovic, Klein, & Vella-Brodrick, 2009; Seligman, et al., 2005). Strengths interventions can range from a 1-week activity (Seligman, Steen, Park & Peterson, 2005) through to a year-long course (Reivich et al., 2003). Although strengths interventions are now being used
widely in schools, most research was initially conducted with the general population and university students. Recently, a number of studies have examined the effects of strengths interventions in schools (Gillham, 2011; Proctor, Tsukayama, Wood, Maltby, Linley, & Fox Eades, 2011; Seligman, et al., 2009). This increased focus on strengths in schools is welcome as there is scant information about the effect of strengths interventions on children. Further, little is known about the effectiveness or appropriateness of individually-focused adult interventions being used in a school setting. Although it is early in the development of this field of research, it may be useful to examine the effectiveness of strengths interventions, what they have taught us so far about strength development and well-being, and how those findings might inform the design of future interventions for school settings.

The initial rationale for strengths interventions was that use of one’s strengths is engaging and fulfilling; therefore, development of an individual’s top strengths should lead to increased engagement and achievement and so enhance well-being (Hodges & Clifton, 2004; Peterson & Seligman, 2004). This review of the literature will explore whether this rationale is justified by the evidence, and ask whether the current focus of strengths interventions is proving effective in its aims or may benefit from revision or expansion. The strengths interventions discussed in this review apply to non-clinical populations, and so are intended to be additive rather than remediate problems, and can be distinguished from the use of strengths-based approaches within therapeutic situations. In sum, this review will examine the research evidence for strengths interventions, the effectiveness of these interventions, their commonalities and differences, and the lessons that can be drawn for the design of future strengths interventions in a school setting.
Strengths Interventions

A strengths intervention is a process designed to identify and develop strengths in an individual or group. Interventions typically encourage the individual to develop and use their strengths, whatever they may be (Clifton & Harter, 2003), although some promote use of all strengths (Popov, 2000) and others prioritise development of particular strengths (Tough, 2011). The goal is to promote well-being or other desirable outcomes (e.g., academic efficacy, living a virtuous life) through this process. Interventions tend to be based on a particular strengths classification with an accompanying inventory or questionnaire to identify strengths, although, as previously mentioned, alternatives exist which adopt an open-ended approach to strengths identification.

Literature Search. To locate English-language strengths intervention studies several search strategies were used. First, the EBSCOhost, Web of Science and PsycINFO online databases were searched using combinations of the following keywords: strengths, intervention, activities, exercises, character strengths, well-being, life satisfaction, positive psychology, strengths inventory and strengths classification. References were also sought from colleagues in Australia, New Zealand, the UK, Canada and the USA.

Studies were included if they explicitly sought to teach or use a strengths classification to enhance well-being. Studies that attempted to enhance well-being through the cultivation of a single strength (e.g., kindness or gratitude) were excluded. Initial criteria included that a study must have pre- and post-intervention measures, include a comparison group, include effect sizes, and be published in a peer reviewed journal. Only a small number of studies met these criteria, with most of those using the VIA. A number of studies have been included which met the criteria but have not been published in a peer reviewed journal, being published in Dissertation Abstracts International (e.g., Rashid, 2004). To
underscore some of the findings from the field and to illustrate the range of domains in which strengths interventions are being used, the initial criteria were also waived for one study without pre-intervention measures (Austin, 2005), and two without control groups (Govindji & Linley, 2008; Minhas, 2010). Where this occurs these factors are noted.

**Strengths Interventions with Research Evidence**

Among the small number of strengths intervention studies conducted to date, the identification and development of one’s strengths has consistently produced small increases in individual well-being in adults and high school students (Austin, 2005; Govindji & Linley, 2008; Mitchell, Stanimirovic, Klein, & Vella-Brodrick, 2009; Proctor, Tsukayama, et al., 2011; Rashid, 2004; Rust, et al., 2009; Seligman, et al., 2005; Seligman, et al., 2009). Details of these studies are included in Table 3.1. Since the publication of this table, two studies have been published that replicated Seligman et al.’s (2005) online strengths study. These studies by Mongrain and Anselmo-Matthews (2012) and Gander, Proyer, Ruch, and Wyss (2012) are discussed in the text.

In an on-line study of self-selected participants, those who were asked to use one of your top five strengths in a new way each day for a week, showed significant improvements in happiness lasting six months, while those who merely noted their top five VIA strengths and used them more often for a week received only transient benefits (Seligman, et al., 2005). The benefits of strengths appeared to come from their use rather than the process of identifying them, with greater effects found for those who continued the exercises beyond the required week. This was the first published study using the VIA. Its focus on top 5 strengths and asking participants to use their top strengths in a new way appears to have influenced the direction of subsequent research.
Table 3.1
Studies Examining the Effects of Strengths Interventions on Well-Being and Performance

<table>
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</thead>
<tbody>
<tr>
<td>PARTICIPANTS</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population (mean age in years)</td>
<td>General adult population (64% 35-54)</td>
<td>General adult population (37)</td>
<td>University students (25)</td>
<td>University students (24)</td>
<td>High school Freshmen students</td>
<td>High school (13)</td>
<td>High school Y9 (est. 13)</td>
<td>Primary school</td>
</tr>
<tr>
<td>Gender: % Female</td>
<td>58%</td>
<td>83%</td>
<td>72%</td>
<td>86%</td>
<td>46%</td>
<td>52%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Sample size</td>
<td>577</td>
<td>160</td>
<td>131</td>
<td>65</td>
<td>527</td>
<td>258</td>
<td>347</td>
<td></td>
</tr>
<tr>
<td>Health status</td>
<td>non-clinical mildly depressed</td>
<td>non-clinical</td>
<td>non-clinical</td>
<td>non-clinical</td>
<td>non-clinical</td>
<td>non-clinical</td>
<td>non-clinical</td>
<td>non-clinical</td>
</tr>
<tr>
<td>MEASURES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-being</td>
<td>SHI</td>
<td>PWI-A; SWLS; PANAS</td>
<td>SWLS</td>
<td>SWLS</td>
<td>-</td>
<td>SLSS; PANAS; RSE</td>
<td>Learning &amp; engagement strengths; social skills;</td>
<td>Qualitative assessment</td>
</tr>
<tr>
<td>Academic performance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>GPA</td>
<td>SPAA</td>
<td>-</td>
<td>GPA</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. * Partial $\eta^2$ = partial eta squared based on Cohen (1988); effect size range: small = .01; medium = .06 and large = .14. **Strict adherence criteria meant that partial-completion excluded subjects from further participation. RA= Random assignment; SHI = Steen Happiness Index; PWI-A = Personal Well-being Index - Adult Scale; SWLS = Satisfaction With Life Scale; PANAS = Positive and Negative Affect Scale; PA = Positive Affect; SPAA = Self-perceptions of Academic Abilities Instrument (sub-scales inc. academic expectancy, efficacy, and self-empowerment); SLSS = Students' Satisfaction with Life Scale; RSE = Rosenberg Self-esteem Scale; GPA = Grade Point Average; BESD = Binomial Effect Size Display; N/A = not available; NS = not significant. † = No pre-test measures taken.
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</thead>
<tbody>
<tr>
<td>PROCEDURE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivery medium</td>
<td>On-line</td>
<td>On-line</td>
<td>In person</td>
<td>In person</td>
<td>In person</td>
<td>In person</td>
<td>In person</td>
<td>In person</td>
</tr>
<tr>
<td>Group or individual setting</td>
<td>Individual</td>
<td>Individual</td>
<td>Group</td>
<td>Group</td>
<td>Group</td>
<td>Group</td>
<td>Group</td>
<td>Group</td>
</tr>
<tr>
<td>Intervention Strategy</td>
<td>Use your top strengths in new ways</td>
<td>select 3 of top 10 strengths to further develop</td>
<td>Develop a strength and a weakness or two strengths, completing weekly strength logs and reflections</td>
<td>Use top strengths more often in life and explicitly plan to develop one weakness</td>
<td>Identify how strengths feature in past and future successes, use top 5 strengths in academic setting.</td>
<td>Build strengths, learn new ones, recognise strengths in others.</td>
<td>Identify strengths and use them in a new way, learn PP concepts e.g., gratitude, savouring, role of positive emotions, purpose and meaning in life.</td>
<td>Whole school community building; strengths use, storytelling, and school assemblies to support staff and student well-being.</td>
</tr>
</tbody>
</table>

**Note.** * Partial \( \eta^2 \) = partial eta squared based on Cohen (1988); effect size range: small = .01; medium= .06 and large = .14. **Strict adherence criteria meant that partial-completion excluded subjects from further participation. RA= Random assignment; SHI = Steen Happiness Index; PWI-A = Personal Well-being Index - Adult Scale; SWLS = Satisfaction With Life Scale; PANAS = Positive and Negative Affect Scale; PA = Positive Affect; SPAA = Self-perceptions of Academic Abilities Instrument (sub-scales inc. academic expectancy, efficacy, and self-empowerment); SLSS = Students’ Satisfaction with Life Scale; RSE = Rosenberg Self-esteem Scale; GPA = Grade Point Average; BESD = Binomial Effect Size Display; N/A = not available; NS = not significant. † = No pre-test measures taken.
### Table 3.1 (Ctd.)

**Studies Examining the Effects of Strengths Interventions on Well-Being and Performance**

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Contact time</td>
<td>1 email</td>
<td>3 online sessions (3-6 hours)</td>
<td>Weekly written feedback on strengths logs. No actual class time</td>
<td>2.5 hours lectures weekly and assignments. Two individual meetings with teacher</td>
<td>Freshman Health seminar. Time not specified</td>
<td>1 hour health class per week for 6 months. Avg. 25% of time used for strengths</td>
<td>20-25 sessions of 80 minutes</td>
<td>Included as part of classroom and school activities</td>
</tr>
<tr>
<td>Intervention duration</td>
<td>1 week</td>
<td>3 weeks</td>
<td>12 weeks</td>
<td>15 weeks</td>
<td>6 weeks</td>
<td>6 months</td>
<td>9 months</td>
<td>2.5 years</td>
</tr>
<tr>
<td>Follow up period</td>
<td>6 months</td>
<td>3 months</td>
<td>none.</td>
<td>6 months</td>
<td>none.</td>
<td>none.</td>
<td>2 years</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**RESULTS**

<table>
<thead>
<tr>
<th></th>
<th>Well-being effect size: (partial $\eta^2$)*</th>
<th>Academic Performance effect size: (partial $\eta^2$)*</th>
<th>Attrition rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cohen's $d$= 0.06 SHI</td>
<td>-</td>
<td>29%</td>
</tr>
<tr>
<td>BESD</td>
<td>0.03 PWI-A</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.07 SWLS</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.15 SWLS</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.02 SLSS</td>
<td>0.01 Expt $\dagger$; 0.05 Efficy $\ddagger$; 0.02 Empwr $\ddagger$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>0.01 PA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17%</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>26%</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>38%</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.01 Expt $\dagger$; 0.05 Efficy $\ddagger$; 0.02 Empwr $\ddagger$</td>
<td>14%</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>0.01 PA</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>83% (66% intervention gp)**</td>
<td>28.2% (6.2% intervention gp)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>26.5% (23% intervention gp)</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>30%</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
| **Note.** *partial $\eta^2$ = partial eta squared based on Cohen (1988); effect size range: small = .01; medium= .06 and large = .138. **Strict adherence criteria meant that partial-completion excluded subjects from further participation. SHI = Steen Happiness Index; PWI-A = Personal Well-being Index - Adult Scale; SWLS = Satisfaction With Life Scale; PANAS = Positive and Negative Affect Scale; PA = Positive Affect; SPAA = Self-perceptions of Academic Abilities Instrument (subscales inc. academic expectancy, efficacy, and self-empowerment); SLSS = Students' Satisfaction with Life Scale; RSE = Rosenberg Self-esteem Scale; GPA = Grade Point Average; BESD = Binomial Effect Size Display; N/A = not available; NS = not significant. $\dagger$ = Post-test group comparison only, no pre-test measures taken.
A recent positive placebo-controlled replication of Seligman et al.’s study (2005) found that the effects of using strengths in a new way were no greater than those obtained by a positive placebo group asked to recall positive personal memories (Mongrain & Anselmo-Matthews, 2012). Both the positive placebo and the strengths conditions showed statistically significant happiness improvements at 6-months post-test when compared to pre-test levels, with small effect sizes (Cohen’s $d$) of .20 and .24 respectively. However, only the positive placebo condition showed significant improvements on pre-test levels at 3-months post-test ($d = .25$). The expectancy control group, which examined early memories, showed improvements in happiness ($d = .10$) at 1-week but not thereafter. In another replication of Seligman et al., Gander et al. (2012) reported an interaction effect between time and condition on a repeated measures ANOVA which compared using strengths in a new way to the early memories expectancy control (effect size of partial eta squared $[\text{partial } \eta^2] = 0.02$). Planned contrasts comparing the strengths condition to the control group indicated that the strengths group was still happier than the control, with a medium effect size reported at 1-month ($\text{partial } \eta^2 = 0.06$), and small effect sizes at 3-months ($\text{partial } \eta^2 = 0.03$), and 6-months post-test ($\text{partial } \eta^2 = 0.04$).

Using signature strengths in a new way was compared to problem-solving in an internet-based intervention (Mitchell et al., 2009), where participants selected three of their top strengths to develop in daily life. The intervention group made significantly greater well-being gains than the control group on a measure that assessed subjective well-being across eight life domains including health, relationships, safety, community, and future security (IWG, 2006), but not on measures of positive and negative affect or life satisfaction. Other researchers have chosen to compare the effects of developing top strengths and lesser or lowest strengths (Rashid, 2004; Rust, Diessner, & Reade, 2009).
One such intervention with university students (Rashid, 2004) involved instructing participants to use their top five (signature) strengths more often (but did not specify how) and to deliberately develop one of their lesser five strengths. The intervention group reported significantly greater well-being gains than those of the control group, but only changes in the top five strengths predicted changes in well-being, despite individual support and explicit development of the lesser strengths. However, Rust et al., (2009) compared the effects of developing strengths and weaknesses and found differing results.

Rust et al. (2009) asked university students assigned to one intervention group to work on developing two top five strengths, while a second intervention group was directed to develop one signature strength and one lesser strength or weakness. Participants submitted weekly strengths logs to their supervising teacher who provided supportive written feedback comments. No statistical differences were found between the two intervention groups despite both having statistically significantly greater well-being gains than a control group. However when gender was analysed as a factor it was found that males experienced significantly greater benefits from the 2-strengths condition than the 1-strength, 1-weakness condition. To date, most research on character strengths has found that despite some gender differences in the distribution of character strengths (Linley, Maltby, Wood, Joseph, Harrington, et al., 2007), there have been no interactions between gender and interventions. Rust et al.’s finding of gender and strength interaction requires further investigation but calls into question the notion that effects of character strengths interventions can be generalised to both men and women equally. Additionally, as participants were self-selected adults, one cannot assume that the findings will apply equally to other populations, including children in school settings. Hence, specific research is required to evaluate the effectiveness of strengths interventions on children.
A limited number of strengths interventions have been conducted with school-age children (Austin, 2005; Govindji & Linley, 2008; Proctor, Tsukayama, et al., 2011). In one such study of high school students that used the StrengthsFinder classification, Austin (2005) examined the effects of strength development on self-perceptions of academic abilities. Students in the intervention group scored significantly higher than the control group on measures of self-perceptions of academic efficacy, academic expectancy, and academic self-empowerment. However, as no pre-test measures were taken it cannot be ascertained whether the groups were similar at pre-test. Nonetheless, it suggests that the strategy of exploring the role of one’s strengths in past and future successes may be worthy of further exploration. Other novel strategies have been explored in strengths interventions with adults and children (Minhas, 2010; Proctor, Tsukayama, et al., 2011).

Using the Realise2 classification, Minhas (2010) found that participants who developed strengths known to them and often used, showed increases in measures of psychological well-being and engagement but not life satisfaction, while those who worked on strengths not previously used (unrealised strengths), increased in life satisfaction and engagement but not psychological well-being. Although this study had a small sample (n = 18) and did not use a control group, it nonetheless suggests that there may be benefits in considering a wider range of strategies in a strengths intervention. Novel strategies have also been adopted in interventions in schools.

Building top strengths, learning new strengths, and learning how to recognise strengths in others were strategies employed in another strengths intervention with high school students, which produced significant increases in life satisfaction, but not significant changes in positive affect or self-esteem (Proctor, Tsukayama, et al., 2011). In this research schools were given six months to use the strengths programme materials provided in health curriculum classes, and teachers completed an average of 23% of the lessons over this period.
Other approaches to strengths identification and development may also help expand strengths development strategies beyond using your top five strengths in a new way; a strategy first used in a large-scale, self-selected, online adult intervention (Seligman et al., 2005).

In a school-wide strengths approach integrated with everyday classroom teaching, character strengths were taught to children through story-telling, school festivals and assemblies (Fox Eades, 2008). Children were encouraged to identify times when they did or did not use each of the strengths. An exploratory evaluation of this approach found, in a pre-post intervention comparison, that it led to improvements in students’ self-confidence, motivation to achieve and behaviour; teacher relationships and resilience; and school climate (Govindji & Linley, 2008). Although not a controlled trial, this qualitative assessment suggests that the well-being benefits of adopting strengths interventions in schools might not be limited to students, but could include teachers and the broader school environment.

A number of studies have developed participants’ ability to recognise strengths in others by analysing fictional or historical characters. Children identified the strengths they heard in oral stories in a UK programme (Fox-Eades, 2008). University students analysed the strengths of the characters in films they watched as part of a strengths programme (Rashid, 2004), and high school students analysed strengths of character in the literature they studied as part of another programme (Reivich et al., 2003). This approach is one that fits well in an educational setting and can also be considered as an intermediate step towards learning to recognise strengths in individuals in a participant’s life.

The goal of these strengths interventions was predominantly to enhance well-being. Results were positive but modest in most cases, even where participants invested considerable time and effort. Only Rashid (2004) and Rust et al. (2009) reported medium-sized effects, of a partial eta squared of 0.15 and 0.07 respectively, while the remaining studies reported small effect sizes. This raises questions such as whether delivering strengths
interventions in isolation is the most effective strategy, whether new strategies or designs may increase intervention effectiveness, and, is enhancing individual well-being the most appropriate focus for a strengths intervention? These interventions suggest future research questions including the nature of gender differences in strength interventions, and the potential of strength interventions to benefit teacher and group well-being. Although most studies specified interpersonal contact or strengths discussion, no studies assessed the effect this had on desirable outcomes associated with relationships and social skills.

The studies discussed so far were stand-alone strengths interventions. At present it is not established if interventions like these will be more or less effective when they are included in broader well-being programmes. One of the few studies that incorporated strengths into a broader programme embedded a positive psychology curriculum, including strengths identification and development in an English class (Reivich et al., 2003). This study aimed to enhance well-being and achievement. Concepts such as gratitude, savouring, positive emotion, and meaning and purpose in life were also included in the curriculum. Significant improvements were reported in students’ academic scores, social skills and learning strengths, and reductions in disordered behaviour when compared to a control group at a two-year follow-up, but there were no group differences on measures of anxiety or depression (Seligman, et al., 2009). Preliminary results from the 3-year follow-up indicated that overall the programme did not influence subjective well-being but did increase engagement and achievement (Gillham, 2011). The results of this research are encouraging but one cannot separate out the contribution made by the strengths component of the intervention.

The studies described above represent the beginnings of a body of scientific evidence for the effectiveness of character strengths interventions. Viewed together, these interventions and other research on strengths and well-being draw attention to certain issues
CHAPTER 3: The Research Evidence for Strengths

for future research including development of a broader range of intervention strategies and assessment of a broader range of outcomes. The influence of interpersonal contact, the effect of time duration on intervention effectiveness, and the need to investigate effects for a wider range of populations is also evident. Greater understanding is required of how strengths are acquired by children and developed by adults, and the sustainability and size of effects possible with these interventions. The need for some agreement on standards of *clinical* or *practical significance* for well-being changes in non-clinical populations is also apparent.

**Strengths Intervention Effectiveness**

**Identifying Potential Intervention Strategies**

Strengths interventions have tested intervention strategies such as using signature strengths in a new way (Mitchell, et al., 2009; Seligman, et al., 2005) and developing top strengths and/or lesser strengths (Austin, 2005; Rust, et al., 2009). However, research has not yet compared which process is more enjoyable for participants or has higher retention rates. In one strengths intervention participants were encouraged to develop their top strengths, learn new strengths, and learn to recognise strengths in others (Proctor, Tsukayama, et al., 2011), whereas another approach focused on noticing and developing all 24 character strengths (Fox Eades, 2008; Govindji & Linley, 2008). The latter approach utilised a combination of strategies but did not analyse the contribution to well-being made by noticing *strengths in others* either to the individual doing the noticing, or those whose strengths were noticed by their peers. Future research could explicitly encourage strengths-spotting as a strategy and assess its effects.

A common thread through all of the interventions was that they required participants to plan or envision their strengths use in the future. For example, by using their strengths in new ways, identifying how strengths will feature in future successes, or planning to develop a
particular strength or weakness. In this way, each of these interventions required the participant to plan, to visualise a different future, and implicitly or explicitly, to set goals. Using signature strengths to pursue goals has been shown to benefit goal progress, which in turn led to greater intrinsic need satisfaction and well-being (Linley, Nielsen, et al., 2010). Future research could directly assess the effect of including explicit goal-setting on a strengths intervention’s success.

**Range of Outcomes Assessed and Measures Used**

Given the prevalent hypothesis in strengths-related research that developing and using one’s strengths is fulfilling, it is natural that well-being has been the primary outcome variable in most strengths research (Gander et al., 2012; Mitchell et al., 2009; Mongrain & Anselmo-Matthews, 2012; Proctor, Tsukayama, et al., 2011; Rashid, 2004; Rust et al., 2009; Seligman et al., 2005). Well-being has predominantly been measured using life satisfaction measures such as the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), and the Student Life Satisfaction Scale (SLSS; Huebner, 1991). Other well-being measures used include the Steen Happiness Index (SHI; Seligman et al., 2005), the PANAS (Watson, Clark, & Tellegen, 1988), and the PWI-A (IWG, 2006).

Although there is a large body of evidence (e.g., Diener & Chan, 2011; Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Lyubomirsky, King & Diener, 2005; Park, 2004) to support the claim that well-being is important both as a predictor of desirable outcomes, and as a desirable outcome in itself, the ways in which well-being is conceptualised and measured is still subject to much discussion. Different conceptions of well-being have been developed over the past 40 years (Diener, 1994; Diener, Suh, Lucas, & Smith, 1999) based primarily on subjective well-being. Subjective well-being (SWB) focuses on the feelings and judgements individuals experience and make about their situations. It includes three measures; positive affect, negative affect and a subjective cognitive evaluation of life satisfaction. This
conception of well-being focuses on an individual’s feeling about their life; positive SWB is about having on balance, positive feelings about one’s experience, and judging oneself to be satisfied with one’s life.

A review of the youth life satisfaction literature confirms the view that the life satisfaction component of well-being is an important variable of interest for youth (Proctor, Linley, & Maltby, 2009a; Proctor, Linley, & Maltby, 2009b). Measures of life satisfaction were positively correlated with activities and domains of life such as physical health, goal pursuit, hope, self-efficacy, perceived social support, and family functioning and negatively correlated with substance abuse, sexual risk-taking behaviour, and eating disorders. The authors asserted that life satisfaction is more than an outcome of psychological states and that it also predicts psychological states and the positive outcomes for youth previously mentioned (Proctor et al., 2009a). As such, measures of youth life satisfaction or well-being can be considered as important predictors, with youth with low life satisfaction at risk for a range of negative outcomes. The authors concluded that life satisfaction is the key indicator of youth subjective well-being (Proctor, Tsukayama, et al., 2009a). However, other research reporting that separate factors predict affective and evaluative measures of well-being suggests that life satisfaction may not be the sole measure to examine for youth (Diener, Ng, Harter, & Arora, 2010).

Diener et al. (2010) found that, in each country studied across a global sample, income was a strong predictor of life evaluation (comparable to life satisfaction) but not of positive or negative feelings (the affective measures). Fulfilment of social and psychological needs (e.g., being treated with respect, having people one can rely on, learning new things, using one’s skills, and choosing how one spent one’s time) was a significantly stronger predictor of positive feelings than was life evaluations. This study emphasised the multi-dimensional nature of well-being and the fact that, as yet, the range of factors which
influence each of those dimensions has not been clearly documented. This suggests that it may be advisable to use broad measures of well-being, particularly in studies where the effect of the factors being studied on the dimensions of well-being is not fully understood.

Other outcomes assessed in strengths interventions include self-esteem (Proctor, Tsukayama, et al., 2011), strengths use (Wood et al., 2011), self-perceptions of academic abilities (Austin, 2005) and achievement as measured by Grade Point Average (GPA; Seligman et al., 2009; Rashid, 2004). The range of effects and mechanisms at work in a strengths intervention have not yet been clearly defined, and some interventions have influenced other desirable outcomes such as engagement and achievement but not well-being (Gillham, 2011). Thus a broader approach to measurement of well-being and other outcomes may prove useful in future strengths research.

**Duration of Intervention and Inter-Personal Contact Time**

The aforementioned interventions differed widely in the time participants spent on the intervention, the level of inter-personal contact, and the individual attention involved. Consistent with the findings of a meta-analysis of a range of positive psychology interventions, interventions of longer duration had greater effect sizes (Sin & Lyubomirsky, 2009). Online interventions varied from one email (Seligman et al., 2005) to 3-6 hours (Mitchell et al., 2009) and all produced small effect sizes. Group interventions were typically of longer duration and their effects ranged from small (Proctor, Tsukayama, et al., 2011), through moderate (Rust et al., 2009) to large (Rashid, 2004). Most group interventions provided 12-30 hours of class time with additional assignments and reading, and individual written or face-to-face feedback and support (Austin, 2005; Rashid, 2004). Although no direct class time was provided in their intervention, Rust et al. (2009) noted that teachers wrote positive comments on student strength logs. In another study, Austin (2005) stated that
teachers in the experimental groups were hand-picked based on their “caring nature” and ability to create positive rapport with students.

It is difficult to disentangle the effect of intervention time duration from the effect of supportive contact and discussion with teachers and peers. Human contact may have been a factor even in one of the internet interventions; Mitchell et al. (2009) instructed participants to share their strengths learning with another person between internet sessions. While researchers have specified inter-personal contact as a part of their interventions, they have not directly assessed the impact of these relationships on end results or the impact of the intervention specifically on the quality of the relationships. Future research might want to examine how these factors contribute to the effectiveness of strengths interventions.

**Research Populations: Gender, Selection and Age**

Internet-based convenience samples and psychology undergraduate programmes have been the source of participants for most character strengths interventions to date (Gander et al., 2012; Mitchell et al., 2009; Mongrain & Anselmo-Matthews, 2012; Rashid, 2004; Rust et al., 2009; Seligman et al., 2005). Both sources provide samples that are heavily skewed towards the female population. For example, female participants made up 58% of Seligman et al.’s 2005 internet-based study, and 83% (Mongrain & Anselmo-Matthews, 2012) and 95% (Gander et al., 2012) of the replication studies. Studies recruited from psychology undergraduates have included 72-86% female participants (Rashid, 2004; Rust et al., 2009).

If, as suggested by recent findings (Rust et al., 2009), gender differences interact with strength development and well-being, future research must address this issue or adopt a cautious stance towards generalising results to both genders.

The strength interventions delivered in online and university settings were also largely self-selected with random assignment to a particular intervention condition (Rashid, 2004; Mitchell et al., 2009; Seligman et al., 2005; Rust et al., 2009). Participants chose to
participate in an internet study (Mitchell, 2009; Seligman et al., 2005) or to take a positive psychology course at university rather than an alternative psychology paper (Rashid, 2004; Rust et al., 2009). As such they do not provide information about the effectiveness of strengths interventions where participants have not expressed at least some interest in the area or intervention. The school-based interventions, in contrast, were universal interventions with the proviso of parental and student consent being given (Austin, 2005; Govindji and Linley, 2008; Proctor, Tsukayama, et al., 2011). School-based strengths interventions provide some evidence that strength interventions are effective overall, for individuals of a certain age, who have not explicitly sought to receive them.

If generalising research findings across the adult population is contentious, it is even more problematic to apply adult strengths research findings to child populations. There is evidence that the distribution and effects of character strengths differ somewhat for children and adults. Children tend to be higher in hope, teamwork and zest, with adults higher in appreciation of beauty, authenticity, leadership and open-mindedness (Park & Peterson, 2006a). Character strengths such as gratitude and curiosity are not correlated with well-being until children reach 8-10 years of age and adulthood respectively (Park & Peterson, 2006b), and in the case of gratitude, the effects of this strength on well-being may vary with gender, prior levels of positive affect, and age (Froh, Kashdan, Ozimkowski, & Miller, 2009). As yet, there is little research on the processes through which strengths are acquired and developed by children. We cannot assume that the strategies used to develop strengths in adults will be appropriate or effective for children. Goal-setting skills and motivation to use strengths cannot be assumed to be the same for children as for adult populations. Developmental changes, for example cognitive development, must be taken into consideration when applying research strategies from adult populations to children. This
suggests that it will be important to continue to develop strengths research across age groups, including longitudinal assessment of strengths development from childhood to adulthood.

**Duration of Effects and Effect Sizes**

The results reported for stand-alone strengths interventions were obtained for follow-up periods which ranged from immediate post-test, albeit of longer interventions (Proctor, Tsukayama, et al., 2011; Rust et al., 2009), through three months (Austin, 2005; Mitchell, et al., 2009;) to six months at longest (Gander et al., 2012; Mongrain & Anselmo-Matthews, 2012; Rashid, 2004; Seligman, et al., 2005). These results cannot provide any indication of whether the benefits achieved might rapidly diminish, or even develop over a longer period of time. Interventions that introduce new concepts and skills have on occasion reported effects that develop sometime after a programme. For example, the Penn Resilience Program, which teaches students to separate their thoughts from their feelings, and to challenge their own thinking, has found that effects did not become apparent until six months after training when participants had internalised the skills and had opportunities to use them (Jaycox, Reivich, Gillham, & Seligman, 1994).

There is some evidence for a possible training effect with strengths interventions but it is not consistent, and is on a very limited number of studies. Mitchell et al. (2009) found that well-being benefits of a strengths intervention increased from the one-month to three-month follow-up. In Seligman et al.’s strengths study (2005) and replication studies (Gander et al., 2012; Mongrain & Anselmo-Matthews, 2012), effects decreased from 1-month to 3-months post-test, and then increased from 3-month to 6-months post-test. In addition, Rashid (2004) found well-being benefits increased from post-test to six-month follow up.

Three-year follow-up results from the U.S. high school positive psychology curriculum study (Gillham, 2011) found that effects on social skills and learning strengths were largest for the first two years and dropped in the third year. This nine month
intervention had no follow-up teaching or whole-school support. Although these are preliminary findings they raise the possibility that a one-off strengths intervention may have a limited duration of effect. Further research over longer time periods will be necessary to determine if strengths interventions are more durable or effective when adopted as an enduring classroom or whole school approach. Furthermore, longitudinal research is needed to establish if the influence of strengths interventions extends beyond the school to include outcomes related to relationships, health and employment in adult life.

Strengths interventions have generally reported statistically significant results for well-being improvements, or academic self-efficacy in the case of Austin (2005). Although these effects have predominantly been small to medium-sized according to Cohen’s categorisation of effect sizes (1988), they have shown that strengths interventions can consistently produce effects. The Rust et al. (2009) and Rashid (2004) group interventions had the longest duration and the largest effect sizes of the stand-alone strengths interventions reviewed. Rust et al. (2009) found a medium-sized well-being effect size, partial $\eta^2 = 0.07$, directly post-test with no further follow-up assessment, while Rashid (2004) found the same post-test effect size, which increased to an effect size of $\eta^2 = 0.15$, at the 6-month follow-up.

Although brief on-line interventions such as Gander et al. (2012) have produced results with similar or larger effect sizes (partial $\eta^2$, 0.03 and 0.04) than some longer duration interventions (0.02, for Proctor, Tsukayama, et al., 2011; 0.03, for Mitchell et al., 2009), these results are not directly comparable as different well-being measures were used. The Seligman et al. (2005) study and replications (Gander et al., 2012; Mongrain & Anselmo-Matthews, 2012) used the Steen Happiness Inventory which was designed to be sensitive to upward changes in happiness (Seligman et al., 2005, p.414), and so may be more sensitive to positive changes in well-being than measures such as the PANAS (Watson et al., 1988) or
SWLS (Diener et al., 1985). Further research is required to determine if effect size is related to duration of intervention or level of personal contact.

The Issue of Clinical Significance in Positive Psychology

Statistical significance indicates that the results of the interventions described above were not produced by chance, but does not provide information as to the likely real life effects of these results, and whether one should regard them as worthwhile or justifying implementation to a wider audience. An approach adopted by a number of researchers in this field (Rashid, 2004; Rust, et al., 2009) has been to describe results in terms of a general purpose effect size, the binomial effect size display (BESD; Rosenthal & Rubin, 1982). The BESD presents results as the difference in improvement rates for experimental and control groups (Randolph & Edmondson, 2005), and is based on calculation of the variance attributable to the intervention. Although a well-being effect size of partial $\eta^2 = 0.04$ could be dismissed as too small to be of interest, a BESD presents this effect size as equivalent to a 20% greater well-being enhancement for students participating in an intervention than for students who did not. If a low-cost intervention can produce a 20% greater well-being improvement for participating students, that outcome may seem both desirable and worthwhile, particularly if it can be shown to result in real-life changes.

To date positive psychology interventions in general, and character strengths interventions in particular, have tended to focus on demonstrating that an intervention produces an effect. At some point, agreement will be needed on how clinical or practical significance can be measured; issues relating to assessment of positive functioning have already been raised within clinical psychology (Joseph & Wood, 2010). It is a complex issue because interventions with sub-clinical effects could contribute effectively to a broader programme, and furthermore, what enables flourishing may vary across individuals and cultures. However, if the goal of strengths interventions is to enhance well-being, then that
enhancement and the observed differences to living need to be quantified in order to demonstrate the ecological validity of these interventions.

Other Research Informing School-Based Strengths Interventions

A school-based strengths intervention will be only one of many factors influencing student well-being and engagement. Many factors such as living conditions, family relationships and support are outside the control of a strengths intervention. This section considers factors that influence well-being and engagement at school and contextual influences on strengths interventions. It also reviews insights for the design and implementation of successful interventions from positive youth development and health-related behavioural change theories. Ensuring that as many of these factors as possible are harnessed to support such a strengths intervention may increase its effectiveness.

School Factors Influencing Well-Being and Academic Engagement

Factors such as support for students’ autonomy, relatedness, and competence, and participation in goal-setting have been shown to influence students’ engagement and well-being (Furrer & Skinner, 2003; Linley, Nielsen, Wood, Gillett, & Biswas-Diener, 2010; Skinner, Furrer, Marchand, & Kindermann, 2008; Veronneau, Koestner, & Abela, 2005). Research shows us that individuals have fundamental psychological needs for autonomy, competence, and relatedness (Ryan & Deci, 2000a). Autonomy is the desire to feel that one is self-directed and one’s actions are meaningful and self-chosen as opposed to coerced by an external force (Deci & Ryan, 1987; Sheldon & Elliot, 1999). Competence is the self-perception, belief, or feeling that one is able to be effective in what one does and able to influence one’s environment (Ryan & Deci, 2000a). Relatedness is the belief or feeling that one is connected to important others and not alienated or isolated (Ryan & Deci, 2000b). Each of the three psychological needs has been shown to relate to well-being in adults and
children as young as third grade (age 8-9 years; Veronneau, Koestner, & Abela, 2005).
Satisfaction of these needs has been shown to facilitate intrinsic motivation and promote
well-being (Deci & Ryan, 2000; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Sheldon,
Ryan, & Reis, 1996), enhance engagement and effort (Ryan & Deci, 2000a; Sheldon, et al.,
1996; Skinner, Furrer, Marchand, & Kindermann, 2008), and support goal-striving and goal-
attainment (Sheldon & Houser-Marko, 2001).

Engagement, or active interest and participation in an activity, is considered a
“primary pathway by which motivational processes contribute to learning and development”
(Furrer & Skinner, 2003, p.149). Engagement is important in schools because it
demonstrates the motivation to learn (Reeve, Jang, Carrell, Jeon, & Barch, 2004). Academic
engagement, in the school context, predicts learning and achievement in the short term and
attendance, retention, graduation, and academic resilience in the long term (Skinner, et al.,
Although engagement predicts important and positive outcomes, it falls from kindergarten
through school, with a sharp drop during transitions to intermediate and high school,
especially for boys, ethnic minorities and lower socioeconomic groups (Skinner, et al., 2008).

Relatedness and autonomy have been shown to play an important role in classroom
engagement. A 2008 school study (Skinner, et al.) found that relatedness predicted emotional
and behavioural engagement, autonomy was the strongest predictor of emotional
engagement, and competence predicted behavioural engagement. Students who started the
school year high in relatedness and autonomy were more likely to continue to work hard and
enjoy school while those with lower levels were more likely to report boredom, frustration
and lower participation through the year.

Skinner et al.’s (2008) findings suggest that students’ interpretation of teacher support
through the year shapes their self-perceptions of competence, autonomy and relatedness.
Teachers’ interactions with students are important for students’ self-perceptions and potentially an important route to build engagement. Skinner et al. suggest that emotional engagement may be the active ingredient that enables motivation to be sustained through the school year. Given that autonomy and relatedness predict emotional engagement, adopting teaching strategies that support autonomy and relatedness may be important routes to building classroom engagement. Including autonomy- and relatedness-supportive strategies in a classroom-based strengths programme might also be expected to support participant engagement and thus programme effectiveness.

There is a large literature indicating the benefits of setting and achieving goals for self-efficacy, developing self-regulation, and enhancing well-being (Latham & Locke, 1991; Locke & Latham, 2002; Maddux, 2002; Sheldon & Elliot, 1999). Furthermore, the selection of particular types of goals, goal-effort and goal achievement, have been shown to have a direct influence on well-being (Sheldon & Elliott, 1999). When a goal is consistent with the goal-setter’s values and interests (described as self-concordant) he or she will tend to put greater effort into their goal-striving and is therefore more likely to be successful (Sheldon & Elliot, 1999). Achievement of self-concordant goals also produces greater well-being than achieving goals which are inconsistent with values or interest (Sheldon & Elliot, 1999). Helping students learn to set goals consistent with their values and interests may make goal-striving more pleasant, increase the likelihood of goal achievement, and enhance self-efficacy and well-being. A strengths intervention that encourages students to set meaningful goals which use and develop their strengths may simultaneously enhance self-efficacy, promote sustained goal-striving, and encourage strengths use. For example, a UK study that assessed goal-related strengths use, goal progress, and well-being in a group of university students, found that strengths use was associated with goal progress and need satisfaction, and that
both of these factors influenced well-being directly (Linley, Nielsen, Wood, Gillett, & Biswas-Diener, 2010).

**Contextual Factors: Relationships and Group Settings**

The developers of the VIA envisaged strengths as individual traits “that are stable and general but also shaped by the individual’s setting and thus capable of change” (Peterson & Seligman, 2004, p. 10). Strengths have, thus far, been viewed as individual traits with little attention given to the settings that promote or inhibit their development. If an individual’s setting is expected to shape strengths, then it may be useful to examine how that takes place. This section examines the evidence that settings (through the people in them) may influence strengths use and well-being. The reciprocal influence of individual behaviour on group climate, how attitudes towards strengths can influence intervention outcomes, and the implications of viewing strengths as culturally shared are discussed.

**How settings may influence strengths use and well-being.** Using strengths is hypothesised to be fulfilling and engaging for an individual, but few people exercise their strengths in isolation (Seligman, 2002). Overwhelmingly, people live in groups, where strengths can be noticed, remarked upon and rewarded, or not. Park and Peterson have commented that, “The most general contribution of the VIA project is to provide a vocabulary for psychologically informed discussion of the personal qualities of individuals that make them worthy of moral praise” (2008, p. 86). In practice, “moral praise” is equivalent to strengths-related positive feedback. There is evidence to suggest that strength-related positive feedback and commenting on strengths observed (sometimes referred to as *strengths spotting*) may influence well-being through a number of processes (Bryant, 2003; Dweck, 1986, 2002; Gable, Reis, Impett, & Asher, 2004; Govindji & Linley, 2008; Kamins & Dweck, 1999; Linley, Garcea, Hill, Minhas, Trenier, et al., 2010).
Strengths-related positive feedback provides the recipient with detail on the strategies they used to perform successfully, rather than praising the individual as a person. These conditions have been shown to promote a flexible mindset, where intelligence and skills are viewed as learnable with effort, which is associated with higher levels of effort and perseverance (Dweck, 1986, 2002; Kamins & Dweck, 1999). Importantly, it has been demonstrated that a flexible or fixed mindset can be promoted through very brief interactions (Mueller & Dweck, 1998).

Commenting on an individual's strengths use may be considered an active constructive response to either a display of strength use or the sharing of positive news where strengths are observed. 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 et al., 2004). Strengths interventions that encourage students to share and respond to each other’s important positive events could be expected to build relatedness. However, sharing good news in not without risk; where positive news is quashed, dismissed or ridiculed relationship satisfaction is worse than if sharing had not happened at all (Gable, 2009). Interventions that encourage sharing in a non-supportive classroom environment may actually reduce relationship satisfaction.

Focusing attention on strengths use by commenting on it may also encourage savouring of the positive behaviour (Bryant, 1989), a practice that is associated with enhanced life satisfaction and well-being (Bryant, 2003). Savouring has also been demonstrated to build positive emotions, resilience, and to buffer against depression (Fredrickson & Joiner, 2002). Comments on an individual's strengths use from those around them will tend to be less predictable than personally generated reminders or praise. As such, strengths comments may reduce hedonic adaptation to the benefits of noticing strengths use.
(i.e., habituation to regular practices which over time become less effective at increasing well-being), (Diener, Lucas, & Scollon, 2006).

Priming therapists to consider a patient’s strengths prior to a therapy session has been shown to promote resource activation (awareness by the patient of their resources and positive expectations about their use to effect change), to encourage attachment in the therapeutic relationship, and to improve therapy outcomes (Flückiger & Grosse Holtforth, 2008). If a strength is noticed and commented on, this strength-related feedback may increase the connection between the noticer and the noticed and encourage further use of the strength, particularly in the same context.

What happens if a strength is used and nobody notices? Without strengths use being noticed by others, an individual is dependent upon their own ability to notice their strengths, enjoy and appreciate their use, and repeatedly use them regardless of feedback. While this “isolated” model of learning may be used to explain strengths development, it is not considered acceptable practice in current pedagogy, where feedback is recognised as one of the largest predictors of students’ learning and achievement (Hattie, 2009). Education and social psychology research suggests that when strengths use is noticed, the user’s future strengths use and the relationship between noticer and noticed will be positively affected (Gable et al., 2004; Hattie, 2009).

**How group climate is influenced by, and affects its members.** The group environment or climate is created by all its members, and is also capable of influencing those individuals. Barsade (2002) has demonstrated that individual moods can alter the group environment in a phenomenon he calls “emotional contagion”. A strengths intervention which encourages group members to notice each other’s strengths may create a positive emotional contagion, modifying the group environment. Such an environmental change may of itself influence individual well-being or learning. Research over the past 30 years has
developed the concept and assessment of the classroom learning environment (Fraser, 1989; Goh, Young, & Fraser, 1995). This research has found a consistent relationship between more socially supportive classrooms and better academic performance (Goh, et al., 1995). The individual moods of group leaders are thought to be most highly contagious (Barsade, 2002); a classroom teacher whose own well-being and mood is high might be expected to positively influence the mood of a classroom.

The relationship between strengths interventions and group environment could be bi-directional. A strengths intervention might potentially enhance an individual’s relationships and wider group environment. In addition, relationships, teacher well-being, and group culture may enhance or inhibit the effect of the strengths intervention on individual well-being.

**How strengths-orientation influences intervention outcomes.** Perhaps not surprisingly, the attitudes of those providing a strengths-based intervention have been shown to influence participant outcomes. A study of the effectiveness of treatment for emotionally disturbed children found that the therapist’s knowledge of and attitude to strengths-based practices was a significant moderator of patient outcomes (Cox, 2006). The strengths-based approach produced successful outcomes for patients (reduction in total scores for behavioural, emotional, and social problems and for internalising and externalising problem behaviours), “when, and only when” the therapist endorsed and practised the approach (Cox, 2006, p. 297).

A pattern similar to that described by Cox (2006) has been observed with attitudes to autonomy support in workplace interventions (Page & Vella-Brodrick, 2010). Office workers trained in job re-crafting to enable greater use of personal character strengths at work made few workplace changes, citing lack of workplace or supervisor support as the main reason (Page & Vella-Brodrick, 2010). They indicated however, that they had implemented
the re-crafting process in their home lives where they had greater autonomy to do so. The effectiveness of a school-based character strengths intervention could likewise depend on how much a student’s teachers, parents, and peers endorse and practise a positive strengths-orientation.

**Strengths are culturally shared.** A view of strengths which focused on the settings that shape strengths could regard strengths as culturally shared rather than individually owned. A similar discussion has taken place within the field of emotions research as to where emotions reside, within the person or between people (Algoe, Fredrickson, Chow, 2010). Algoe et al. (2010, p. 118) have argued that a both-and perspective is more useful than an either-or perspective. They point out that “ Cultures shapes people’s values and, in doing so, they also shape whether or not given events trigger ‘good feelings’” (Algoe et al., 2010, p. 122). The same argument can be extended to the cultural influence on whether or not strengths use will be associated with “good feelings”, which over time will affect well-being.

A strength that is more valued in a specific culture or environment, (e.g., school or workplace), is likely to receive more positive feedback and acknowledgement. Therefore, a strength that receives more positive feedback may be associated with greater positive feelings, and, over time, greater well-being. For example, a contemporary dance choreographer may receive scant positive feedback while living in a setting where humility and perseverance is valued but not creativity. Transported to an environment where creativity is highly valued, the same person may receive more positive comment, and the association between creativity and well-being may increase in the setting where it is valued. Thus, how one’s strengths are valued in one’s community may be a factor in the association of that strength with well-being. In other words, the effects of strengths on well-being may
occur “between us” as well as “within us”; some of the ways in which strengths influence well-being may be social rather than individual.

**Strengths Intervention Design: Learning from Other Fields**

Despite the theory that using one’s strengths is engaging and fulfilling, a strengths intervention remains, at its core, a behavioural change intervention which aims to increase strengths use and development. Scholars working in health behaviour change (Prochaska & Velicer, 1997) and positive youth development (PYD; Damon, 2004) have extensive experience in developing programmes that produce change; they emphasise building motivation for change and supporting sustained changes in behaviour. Insights from PYD may be particularly relevant in designing strengths interventions for young people.

**Positive youth development.** The goal of PYD interventions is to promote positive outcomes for youth which include both well-being and academic achievement (Catalano et al., 2004). Youth well-being is recognised as an important variable in schools because as well as being a desirable outcome in its own right, it influences educational achievement (Proctor et al., 2009a). A meta-analysis of PYD interventions to enhance development and well-being found that programmes which were systemic, complex and of long duration were most effective in achieving positive outcomes for youth (Catalano, et al., 2004). They operated across more than one social domain (family, peer, school, and community environments) and considered the social and environmental contexts that were important influences on outcomes. They were not focused on only one problem behaviour, but addressed a range of protective and risk factors and applied them to real-life situations for the participants. Most successful programmes lasted nine months or longer, a finding consistent with a meta-analysis of positive psychology interventions by Sin and Lyubomirsky (2009), which also found that longer interventions had greater effect sizes.
The transtheoretical model of health behaviour change. The transtheoretical model of health behaviour change (TMHBC) has empirical support for health-related behaviour change including weight loss and exercise (Prochaska & Velicer, 1997). Design insights from TMHBC may be relevant for universal strengths interventions in schools. These state that individuals need compelling reasons to change; that motivation cannot be assumed and must be built by establishing salient personal benefits, (i.e., building the case for change); and that individuals need on-going support and rituals or habits which support the changes they are trying to establish in their lives (Prochaska & Velicer, 1997). Similar to findings from PYD, this research has identified that recruiting an individual’s significant others or friends as support in a programme can benefit outcomes. For example, weight loss programmes that involve friends of the participant have been shown to be successful at maintaining weight loss (Wing & Jeffrey, 1999). Utilising this research should promote the design of strengths interventions that participants are motivated to use, and that engage them in relevant and meaningful goals. It should also encourage the use of a range of methods, both internal and external to the individual, to support and encourage ongoing strengths use.

The lessons learned from PYD are consistent with a number of the findings of Sin and Lyubomirsky’s (2009) meta-analysis of positive psychology interventions. The meta-analysis indicated that interventions were more effective when they were longer, and for self-selected individuals who were motivated to make changes. PYD interventions acknowledge that motivation cannot be assumed, and therefore an important role of the intervention is to make it relevant and applicable to the young person’s life in order to build their motivation to participate. PYD and TMHBC both involve an individual’s significant others in interventions to build support and to overcome the problem of hedonic adaptation. Involving significant others in an intervention practice (e.g., weight loss or strengths development) makes habituation less likely.
Rationale for this Study

Although all strengths interventions target strength use and development, strength classifications differ in their origins and objectives. Accordingly, interventions based on certain classifications may be more or less suited to different environments and goals. Consideration should be given to which strength classification is most appropriate in a given situation; including which classification’s strengths have greatest face validity with and are most valued by the proposed user group, and what purpose they hope to achieve through use of the strengths intervention.

Initial studies, primarily of character strengths interventions, demonstrated small but consistent well-being effects for development of an individual’s top strengths (Mitchell et al., 2009; Seligman et al., 2005). However, working on weaknesses may be as effective for women as working on strengths (Rust et al., 2009). The finding of different gender effects suggests that different strategies may be required for different groups and that interventions will need to be tailored to specific populations. The importance of goal-setting within strengths interventions has not been fully explored, although planned future use of strengths is common to most interventions. Strategies that warrant further examination include reflecting on the role strengths have played in past successes and how they might help future goals; learning new strengths; spotting strengths in others as well as self; noticing strengths in story, literature or film; and using strengths in goal-related planning and activity.

There is evidence that strengths interventions can enhance psychological well-being (Biswas-Diener, et al., 2011; Mitchell, et al., 2009), happiness (Seligman, et al., 2005), and life satisfaction (Proctor, Tsukayama, et al., 2011; Rashid, 2004; Rust, et al., 2009). However well-being effects have been variable; some studies found effects on life satisfaction but not positive affect (Proctor, Tsukayama, et al., 2011), while others have found no effects on well-being but significant changes in other desirable outcomes including improvements in
academic achievement, social skills, and learning strengths (Gillham, 2011; Seligman, et al., 2009). Yet other studies have found changes such as increased academic self-efficacy (Austin, 2005) and self-esteem (Minhas, 2010). The latter has also been shown to contribute uniquely to subjective and psychological well-being (Govindji & Linley, 2007). Given the uncertainty of the effects of strengths, it seems reasonable to include both affective and evaluative measures of well-being and to assess a broad range of outcomes.

Among the few published studies, strengths interventions of longer duration were more effective than shorter ones (Gander et al., 2012; Rashid, 2004; Rust et al., 2009; Seligman et al., 2005). Even time-intensive, longer duration interventions produced only moderate results. One of the challenges facing the field is the lack of an agreed standard of clinical significance against which to judge results. Criticising these studies for producing “only moderate results” may prove unduly harsh; the real life or long-term implications of a moderate increase in well-being have not been quantified. If small changes in well-being include an increase in positive emotions, then the broaden and build theory of positive emotions (Fredrickson, 1998) and subsequent research (Fredrickson & Joiner, 2002) would suggest that these small changes may initiate upward spirals of positive change. In this case, small positive changes could become self-sustaining or lead to even greater change over a longer period. Longer follow-up periods will be required to determine if this occurs.

Character strengths interventions have for the most part focused on individual well-being with little involvement from significant others at work, home or school. This approach, characterised by one researcher 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? These relationships could potentially be enlisted to increase the effectiveness of strengths interventions. Moreover, interventions could target improving relationships and group morale rather than individual well-being and achievement. One
school-based strengths programme did promote recognition of strengths in others and common 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.

Strengths interventions promote strengths knowledge but not all of them successfully translate into increased strengths use or well-being. Strengths use predicts well-being whereas strengths knowledge does not (Govindji & Linley, 2007; Seligman, et al., 2005). A better understanding of the requisite elements of a successful strengths intervention will assist in designing more effective interventions. Strengths classifications are a means to identify strengths; they are not usually designed as pedagogical tools and as such, cannot be assumed to be a motivating or engaging process of working with individuals. Perhaps because using one’s strengths is theorised to be engaging and fulfilling it was expected that participants in a strengths intervention would have high motivation and task completion, resulting in great benefits. Even though strengths are thought to be fulfilling to use, just learning one has a strength does not appear to provide sufficient motivation to use it (Seligman et al., 2005).

In sum, the research previously discussed suggests that strengths interventions should provide a compelling rationale for participation; provide activities which are engaging, relevant and meaningful; and build support through people, habits, and rituals which encourage and sustain on-going strengths use. Given that the attitude of a therapist towards strengths influenced outcomes for their patients (Cox, 2006), classroom-based strengths interventions may benefit from assessing the strengths-orientation of teachers.

Understanding of character strengths is in its early stages. It is appropriate, therefore, to examine new ways of developing strengths, measure a broad range of outcome variables including relationships and group climate, and to assess the impact of contextual factors on their effectiveness.
CHAPTER 3: The Research Evidence for Strengths

Objectives of the Thesis

The aim of undertaking this research is to develop and trial a classroom-based strengths intervention programme for students aged 9-12 years, an age group not previously studied in strengths intervention research, utilising a range of intervention strategies and outcome measures. The strengths programme, named Awesome Us, is designed to support student and teacher engagement and motivation to participate in the programme; foster a climate of strength-spotting in the classroom and encourage recognition of strengths in self and others; build on students’ existing experiences of strengths, and help them recognise where they use strengths in everyday life; and to help students develop strengths by identifying how and where they can use them to support meaningful personal goals and deal with the challenges they face.

A central hypothesis of this thesis is that a classroom-based strengths intervention may have broader effects than previously demonstrated. Using and developing one’s signature or top strengths has been shown to enhance individual well-being (Seligman et al., 2005; Gander et al., 2012) and strengths use has been associated with increased self-esteem (Wood et al., 2011). Strengths use was hypothesised to increase well-being through an enhanced sense of competence and mastery experience, although no evidence for this hypothesis has been published (Seligman, 2002). A schematic describing this strengths hypothesis and the current research evidence of the effect of strengths on well-being and self-esteem is provided in Figure 3.1. This figure also illustrates evidence for the effect of relatedness on classroom engagement (Furrer & Skinner, 2003) and class climate (Fraser, 1989). Although strengths use has been linked to enhanced self-esteem, this has not been demonstrated to result in increased well-being and so this mechanism is not shaded.
CHAPTER 3: The Research Evidence for Strengths

Figure 3.1. Current evidence on strengths intervention and relatedness effects, and theorised strengths mechanisms.

*Note.* Outlined arrows = hypothesised effect or pathway. Solid arrows = research evidence for this effect exists.

This study proposes that in addition to well-being effects, acknowledgement of strengths use by peers and teachers may also lead to enhanced relatedness, which is demonstrated to support classroom engagement (Furrer & Skinner, 2003), and to enhance class climate (Fraser, 1989). A schematic describing this study’s hypotheses of the effects of a classroom strengths intervention on student outcomes is provided in Figure 3.2.

Figure 3.2. Hypothesised effects of a classroom-based strengths intervention on student outcomes.

*Note.* Outlined arrows = hypothesised effect. Solid arrows = research evidence for this effect exists.
A further hypothesis of this thesis is that contextual factors such as teachers’ well-being and attitudes towards strengths will influence the effectiveness of the intervention for students.

In this study, the following hypotheses will be examined:

1. that a brief, classroom-based strengths intervention with 9-12 year olds will increase individual student classroom engagement and well-being relative to that of a control group over the study period;
2. that the strengths intervention will have group and relationship benefits, namely increasing students’ relatedness to others and enhancing class climate in participating classes, relative to that of a control group over the study period; and
3. that the change in teacher well-being and strengths-orientation over the study period will contribute to the student well-being, engagement, relatedness, and class climate outcomes over the study period. The influence of contextual factors on individual outcomes will be further explored through exploratory analysis of the influence of teacher strengths values on student outcomes.

A mixed methods approach was selected to enable a quantitative analysis of the strengths programme’s effects using a range of measures, plus a qualitative analysis of the programme’s effects on participants. The qualitative study will explore the student experience of learning about and using strengths, and the teachers’ experience of working with the programme and their observations of how their students responded to it. In the absence of an agreed standard of clinical significance for well-being and associated changes, these qualitative data provide evidence of the clinical or practical significance of the intervention. In addition, although the construct of strengths is central to this field of research, there is a dearth of data examining how strengths are understood by participants and
if they consider strengths to be useful. Information from the qualitative study may also be used to consider the suitability of strategies and assessment used in strengths interventions with children of this age group.
CHAPTER 4: Method

Introduction

This chapter describes the methodology used to develop, deliver, and evaluate the strengths intervention that was used to test the hypotheses proposed in Chapter 3. It describes the participants recruited for this study, the measures selected for assessment and the procedure used.

Participants

A convenience sample of nine classroom groups (N = 196; 88 female, 108 male) and their teachers 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%), with 12.6% identifying as Maori. Six classes were assigned to an intervention group and three to a control group. The assignment process is described in the Procedure section of this chapter. Details on gender, age, ethnicity, and socioeconomic status for intervention and control groups are included in Table 4.1. Demographics of teachers are discussed in Chapter 7.

Participants came predominantly from low to mid socio-economic groups. New Zealand schools are assigned a decile rating by the Ministry of Education. Decile 1 schools are the 10% of NZ schools with the highest proportion of students from low socio-economic backgrounds and decile 10 schools are the 10% of NZ schools with the lowest proportion of students from low socio-economic backgrounds (Ministry of Education, 2011). The decile rating takes into account household income, parental occupation, household crowding, parental educational qualifications, and qualification for income support in the school catchment area. More than 75% of students attended schools with a decile 5 rating or lower, with 52% attending decile 1 to 3 schools.
Table 4.1
Demographic Data for Intervention and Control Group Participants

<table>
<thead>
<tr>
<th>Demographic Details</th>
<th>Intervention (n=140)</th>
<th>Control (n=56)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td><strong>Gender:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>65</td>
<td>46.4</td>
</tr>
<tr>
<td>Males</td>
<td>75</td>
<td>53.6</td>
</tr>
<tr>
<td><strong>Age (as at Feb 1, 2011):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 years</td>
<td>3</td>
<td>2.1</td>
</tr>
<tr>
<td>9 years</td>
<td>46</td>
<td>32.9</td>
</tr>
<tr>
<td>10 years</td>
<td>77</td>
<td>55.0</td>
</tr>
<tr>
<td>11 years</td>
<td>7</td>
<td>5.0</td>
</tr>
<tr>
<td>12 years</td>
<td>7</td>
<td>5.0</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>9.78 (.787)</td>
<td>10.13 (1.13)</td>
</tr>
<tr>
<td><em><em>Ethnicity</em>:</em>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NZ European</td>
<td>102</td>
<td>72.9</td>
</tr>
<tr>
<td>Maori</td>
<td>20</td>
<td>14.3</td>
</tr>
<tr>
<td>Pacific Island</td>
<td>6</td>
<td>4.3</td>
</tr>
<tr>
<td>Asian</td>
<td>3</td>
<td>2.1</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>3.6</td>
</tr>
<tr>
<td>No response</td>
<td>21</td>
<td>15.0</td>
</tr>
<tr>
<td><strong>School Decile Rating:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3</td>
<td>60</td>
<td>42.9</td>
</tr>
<tr>
<td>4-5</td>
<td>47</td>
<td>33.6</td>
</tr>
<tr>
<td>6-8</td>
<td>33</td>
<td>23.6</td>
</tr>
<tr>
<td>9-10</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Totals do not equal 100% (140 or 56) as respondents can select more than one ethnicity.

**Measures**

**Selection of Measures**

Brevity and clarity of expression were priority criteria for scale selection because this study assessed a wide range of outcomes with students of a young age (9-12 years), at three time periods. The measures selected for the study are listed in Table 4.2. A copy of each measure used in the study is included in Appendix B. Well-being research with this age group is not widely studied so it was considered necessary to pilot the measures with students who completed the planned measures following the intervention pilot. All completed the full battery of questionnaires satisfactorily within the planned timeframe of 10-20 minutes and so all measures were included in the final version.
<table>
<thead>
<tr>
<th>Construct</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students Measures</strong></td>
<td></td>
</tr>
<tr>
<td>Well-being</td>
<td>International PANAS Short Form (I-PANAS-SF; Thompson, 2007) (10 items), and Students’ Life Satisfaction Scale (Huebner, 1991) (7 items).</td>
</tr>
<tr>
<td>Student Classroom Engagement</td>
<td>Behavioural &amp; Emotional Engagement, Student Reports, (Skinner, Kindermann, &amp; Furrer, 2009) (20 items).</td>
</tr>
<tr>
<td>Modified Class Climate</td>
<td>My Class Inventory (MCI; Fisher &amp; Fraser, 1981), Cohesiveness and Friction sub-scales only (14 items).</td>
</tr>
<tr>
<td>Psychological Need for</td>
<td>The Children’s Intrinsic Needs Satisfaction Scale (CINSS; Koestner &amp; Véronneau, 2001). Each scale is assessed across 3 domains: home, at school and with friends (18 items).</td>
</tr>
<tr>
<td>Autonomy, Relatedness, and</td>
<td></td>
</tr>
<tr>
<td>Competence.</td>
<td></td>
</tr>
<tr>
<td>Use of strengths.</td>
<td>Strengths Use Scale, questionnaire on frequency and range of strengths use (Govindji &amp; Linley, 2007) (14 items).</td>
</tr>
<tr>
<td>Goal self-concordance, striving</td>
<td>Measure of goal self-concordance, striving and attainment were adapted from Sheldon and Elliot (1998). A further goal completion question was added.</td>
</tr>
<tr>
<td>and attainment</td>
<td></td>
</tr>
<tr>
<td><strong>Teacher Measures</strong></td>
<td></td>
</tr>
<tr>
<td>Value Ranking of Character</td>
<td>A forced ranking of the 24 VIA strengths in order of the importance they attach to them in the classroom (24 items).</td>
</tr>
<tr>
<td>Strengths</td>
<td></td>
</tr>
<tr>
<td>Strengths Orientation</td>
<td>Strengthspotting Scale (Linley et al., 2010) (12 items), a questionnaire that assessed attitudes to identifying strengths in others, frequency of practice, and motivation for noticing strengths.</td>
</tr>
<tr>
<td>Use of strengths.</td>
<td>Strengths Use Scale, questionnaire on frequency of strengths use (Govindji &amp; Linley, 2007) (14 items).</td>
</tr>
</tbody>
</table>
Student Measures

Unless otherwise indicated, measures were administered to students in the week prior to the strengths programme (pre-test), in the week immediately after the programme (post-test), and in the week three months after the post-test (follow-up). All measures were administered to both intervention and control group students except for those relating to goals and views of the strengths programme which only the intervention group received.

Well-being

The international positive and negative affect schedule-short form (I-PANAS-SF).

This 10-item adaptation of the PANAS scale (Watson, Clark, & Tellegen, 1988) was selected for use in this study over the 30-item PANAS-C, developed for children (Laurent, Catanzaro, & Joiner, 1999) because brevity was a priority. Specifically developed for use by non-native speakers of English, and as part of longer studies which required brief measures, the I-PANAS-SF contains five items each for the two sub-scales of positive affect and negative affect (Thompson, 2007). Respondents use a 5-point Likert scale to indicate the frequency with which they have experienced each affect in the past week (from 1 = never, to 5 = always). Sub-scale scores range from 5 to 25. Total scale scores, calculated by subtracting negative from positive affect scores, range from -20 to +20, with higher scores reflecting a higher ratio of positive to negative affect. Three of the 10 I-PANAS-SF items used were displayed to students with alternatives displayed in brackets as synonyms; hostile (angry), inspired (lively), and attentive (paying good attention). Reliability statistics (Cronbach’s alpha) for the positive affect (PA) and negative affect (NA) sub-scales have been reported at .80 and .74 respectively (Thompson, 2007). Criterion validity has been demonstrated in a study with three adult samples from over 66 countries (n = 1,789), that provided evidence of cross-sample stability and significant positive bivariate correlations of the short form with the full form PANAS at .92 (p < .01) for PA and .95 (p < .01) for NA (Thompson, 2007). Each
sub-scale of the short form demonstrated significant positive correlations (ranging from $r = .33$ to $r = .39$) with measures of subjective well-being and subjective happiness (Thompson, 2007). Cronbach’s alphas for pre-test data in the present study were .66 for PA and .66 for NA.

**The students’ life satisfaction scale (SLSS).** The SLSS is a 7-item self-report measure of global life satisfaction suitable for use with children from 8 years upwards (Huebner, 1991a, 1991b). The scale assesses overall life satisfaction using a 6-point Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Scores range from 6 to 42, with higher scores reflecting higher life satisfaction. Reliability evidence for the scale, in terms of Cronbach’s alpha, has been reported at .82, and a principal components factor analysis supported a one factor solution (Huebner, 1991a). A review of youth life satisfaction measures documented a further 11 studies which used the SLSS with students from 9 to 16 years, and reported alpha coefficients from .73 to .86 (Proctor et al., 2009b). Criterion validity has been demonstrated with evidence of significant positive correlations (ranging from $r = .34$ to $r = .62$) with measures of positive affect, happiness and life satisfaction and significant correlations in the expected direction with a measure of anxiety ($r = .38$), (Huebner, 1991a). Evidence for the independence of the life satisfaction variable from affective variables was provided by a principal components analysis of the scale and affective measures (Huebner, 1991b). For pre-test data in the current study Cronbach’s alpha was .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, Kinderman, & 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 and disaffection during classroom learning activities. Items are scored on a 4-point Likert-type scale ranging from 1 (not at all true) to 4 (very true). Sub-scales scores range from 5 to 20. The sum of the behavioural and emotional disaffection sub-totals are subtracted from the behavioural and emotional engagement sub-totals to give an overall engagement score that ranges from -30 to 30. Higher scores reflect a higher level of overall engagement. Reliability evidence in terms of Cronbach’s alpha has been reported for the aggregate engagement and disaffection sub-scales as .79 for engagement, and .86 for disaffection (Skinner et al., 2009). Evidence for criterion validity of the scale, gathered over a range of US classroom-based studies, indicated significant positive correlations (ranging from $r = .33$ to .71) with personal and social indicators of motivation such as confidence in abilities, intrinsic regulatory styles, higher relatedness to social partners especially teachers and classmates, optimism, and supportive relationships (Skinner et al., 2009; Skinner et al., 2008). Significant negative correlations (ranging from $r = -.26$ to -.70) were found with factors thought to undermine motivation such as external regulatory style, higher pessimism, and hostile and controlling interactions with teachers. For the pre-test data in this study, Cronbach’s alphas were .87 for total engagement (behavioural and emotional) and .82 for total disaffection (behavioural and emotional).

**Modified class climate.** The My Class Inventory (MCI), an age appropriate measure of class climate developed specifically for use in primary schools (Elementary schools) contains five sub-scales (cohesiveness, friction, satisfaction, difficulty, and competitiveness) which respectively have 6, 8, 9, 8, and 7 items (Fisher & Fraser, 1981, Fraser, 1982). For brevity, only the cohesion and friction sub-scales are included in this study as research suggests that cooperativeness, conflict, and task performance are the group factors primarily influenced by changes in mood of group participants (Barsade, 2002). The cohesion and friction sub-scales are designed to capture changes in cooperativeness and conflict, and
Changes in task performance are already broadly covered by the assessment of student behavioural engagement in the classroom. Furthermore, research on class climate and mathematics achievement has indicated that greater cohesiveness and less friction was associated with a more positive student attitude towards mathematics and with achievement, whereas competition was not associated with student outcomes (Goh, Young, & Fraser, 1995).

Items are presented as statements to which respondents answer yes or no. Apart from one reverse scored item on the friction scale, a yes score is equivalent to 3 points, and a no score to 1. Scores range from 6 to 18 for the cohesiveness sub-scale, and 8 to 24 for the friction sub-scale. Total scores for the cohesion and friction sub-scales were divided by the number of items, six and eight respectively, to provide mean scores for each sub-scale. An overall modified class climate score was calculated by subtracting the mean friction score from the mean cohesion score. Overall scores for the modified class climate measure ranged from -2 to +2, with higher scores reflecting a higher level of class climate (i.e., greater cohesion and less friction). Alpha coefficients for both the cohesiveness and friction sub-scales were reported as .67 for students and .94 for class units (Fisher & Fraser, 1981). These two sub-scales of the full MCI have been shown to measure distinct concepts, with a negative correlation of $r = -.41$, (Fisher & Fraser, 1981). Some criterion validity for the scale has been demonstrated with evidence of significant canonical correlations between student and teacher perceptions of school climate ($\rho = .82$ and .62 respectively), and of the predictive validity of the MCI dimensions in reading and mathematics programmes, and assessment of school achievement and attendance (Fisher & Fraser, 1981). Cronbach’s alphas for pre-test data in this study were .64 for the Cohesion sub-scale and .74 for the Friction sub-scale.
**Goal-setting, progress and achievement.** Goal-setting was a part of the intervention programme and so was not undertaken by the control group. Questions on goal-setting, progress, and achievement were administered at post-test and follow-up.

**Goal self-concordance.** Processes for assessing goal concordance have been documented in a number of studies on self-concordant goal-setting and well-being (Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001). In a semester-long study of US university students, participants were asked to select 6-8 goals or projects that they would expect to complete during the semester (Sheldon & Elliot, 1999). To assess the self-concordance of goals participants were asked to rate their reasons for choosing these goals. Four reasons for choosing a goal were provided; external (*you pursue this goal because somebody else wants you to or because the situation demands it*), introjected (*you pursue this goal because you would feel ashamed, guilty or anxious if you didn’t*), identified (*you pursue this goal because you really believe it’s an important goal to have*), and intrinsic (*you pursue this goal because of the fun and enjoyment that it provides you*). Each statement was scored on a scale of 1 (*not at all for this reason*) to 9 (*completely because of this reason*). An average was calculated for introjected and external reasons, which was subtracted from the average for intrinsic and identified reasons to give a *self-concordance variable*. Reliability evidence for this form of self-concordance assessment has been reported as Cronbach’s alpha of .72 (Sheldon & Elliot, 1999).

A simplified version of the goal self-concordance assessment was used in this study. Students were asked to choose two goals that they could complete within the 3-month assessment period. One goal was a personal goal *that matters to you and that you would really like to achieve*, and the other goal was to start a new friendship or develop an existing one. Students rated both of their goals in terms of their self-concordance, selecting one of four options similar to those provided in Sheldon and Elliott (1999): *I chose this goal*
because, 1. someone else wanted me to; 2. I would feel bad or guilty if I didn’t; 3. I think it’s an important goal to have; or, 4. It’s a fun and enjoyable goal. Rather than rating each motivation on a 9-point scale, respondents selected one motivation option. Participant responses at post-test were categorised into two groups, those with extrinsic motivation (option 1 or 2) and those with intrinsic motivation (option 3 or 4). Cronbach’s alphas for the overall goal self-concordance data in this study was .67 at post-test and .61 at follow-up.

**Goal-striving and goal-attainment.** In a semester-long study of university students, Sheldon and Elliot (1998, 1999) assessed participant goal striving at intervals during the research period by asking participants how hard they tried to complete or progress each goal in the intervening period, using a scale from 1 (not at all hard) to 7 (very hard). A goal-striving or goal-effort variable was then computed by averaging all the ratings over the assessment period. Reliability evidence, using Cronbach’s alpha, for the goal-effort variable was reported at .75 (Sheldon & Elliot, 1999). Goal progress or attainment was measured by asking participants how effective they had felt in each goal project during the last assessment period (How well are you doing?) on a scale from 1 (not well at all) to 9 (very well). An overall goal attainment variable was calculated by averaging these ratings, and reported a Cronbach’s alpha of .90 (Sheldon & Elliot, 1999).

To assess goal striving and attainment, the participants in this study were asked, “how hard are you trying at this goal this week?” and, “how well have you done with your goal up to now?” Responses were rated on a 9-point Likert scale from 1 (not at all) to 9 (extremely). Goal striving and goal attainment variables were calculated and a mean score of both was computed to serve as an overall goal striving and progress variable. Scores ranged from 1 to 9, with higher scores reflecting higher goal striving and progress. Cronbach’s alpha for the combined goal striving and attainment data in this study was .82 at post-test, and .96 at 3-month follow-up.
**Goal achievement.** Participants in the present study were asked to choose goals they believed were achievable within a 3-month time period so that progress and attainment could reasonably be assessed. However, no lower limit was placed on the time required to complete a goal. Hence, an option was provided for students to indicate if they had achieved their goals at either the post-test or 3-month follow-up assessment periods. Participants were asked to answer *yes* or *no* to the questions, “have you achieved your personal goal already?” and, “have you achieved your friendship goal already?” Goal completion percentages were calculated for personal and friendship goals at post-test and follow-up. Viewed with the goal striving and attainment results, they provide an overall picture of the level of commitment and adherence to the goal-setting aspect of the programme.

**Intrinsic need satisfaction.** The Intrinsic Needs Satisfaction Scale (Deci, Ryan, Gagne, Leone, Usunov et al., 2001) was adapted to form the 18-item Children’s Intrinsic Needs Satisfaction Scale (CINSS; Koestner & Véronneau, 2001). This scale comprises three sub-scales (autonomy, competence, and relatedness) with six questions per sub-scale. Satisfaction of each need is assessed across three domains (home, school, and with friends). Each item is a statement, which is assessed using a three point Likert-type scale ranging from 1 (*not true for me*) to 3 (*very true for me*). Scores for the full scale range from 18-54 (6-18 for each sub-scale). All items are positively scored with higher scores indicating higher need satisfaction. Reliability evidence has been reported for each sub-scale using Cronbach’s alpha (autonomy, .71; competence, .76; relatedness, .76), (Veronneau, Koestner, & Abela, 2005). Criterion validity for the scale has been reported from a study of Canadian third and seventh graders (ages 7-9, and 12-13) where the three needs demonstrated significant positive correlations (ranging from $r = .31$ to $.43$) with measures of positive affect, and significant negative correlations (ranging from $r = -.18$ to -.37) with negative affect (Veronneau et al.,
Cronbach’s alpha for the pre-test data in this study were .85 for the full scale, competence .73, autonomy .69, and relatedness .68.

**Character strengths.** The strengths classification used in this research was the VIA Inventory of Character Strengths (Peterson & Seligman, 2004). Available as an online survey, the adult version of the inventory contains 240 items, and the student version, suitable for age 12-18 years, contains 198 items (Park & Peterson, 2006). The online survey was not used for several reasons; most of the participants were below the validated age group range, the length of the assessment has proven off-putting for some students (Rashid et al., in press), and most importantly, an integral part of this research was trialling an alternative process of identifying character strengths. Student participants in the intervention group identified their character strengths through a series of activities described in the following chapter, which included selecting character strengths from a card sort of the 24 VIA strengths. Teachers identified their character strengths from a list of the 24 VIA strengths. Strengths research has recently been conducted with the general population (Mitchell et al., 2009) and in schools (Proctor, Tsukayama, et al., 2011) that has assessed strengths by asking respondents to select their strengths from a list. Proctor, Tsukayama, et al. (2011) found that the most- and least-commonly endorsed VIA strengths were similar to those found using the online VIA-IS measure, and concluded that respondents’ self-selection of their strengths from a list is a valid alternative to completing the on-line tool.

**Strengths use.** The 14-item Strengths Use Scale assesses the use of strengths as perceived by the respondent and is not restricted to the definitions of strengths used by any particular strengths classification (Govindji & Linley, 2007). Items are phrased as statements that describe the extent to which an individual uses their strengths, defined as “the things you do well or do best”, across a variety of settings, and also asks about the regularity or frequency of strengths use. For this study, one item that asked about work was modified to
read *school gives me lots of opportunities to use my strengths*. Respondents use a Likert scale to indicate the extent to which they agree with the statements ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Total scores range from 14 to 98 with higher scores reflecting higher strengths use. Internal reliability for the scale, using Cronbach’s alpha, has been reported at .95 in two studies of UK university students (Govindji & Linley, 2007; Proctor, Maltby, et al., 2011). Principal components analysis has indicated that the 14 items form a single component with items loading on a single strengths use factor (Govindji & Linley, 2007). Criterion validity was indicated by evidence of significant positive correlations (ranging from $r = .51$ to .63) with factors such as self-esteem, self-efficacy, subjective well-being, and psychological well-being (Govindji & Linley, 2007). Cronbach’s alpha for the pre-test data in this study was .93.

**Student acceptance of and engagement with the strengths programme.** Students were asked at post-test to rate their enjoyment of and interest in the strengths programme and to report on how useful it was to them and how frequently they used what they learned in the programme. Students responded to four brief statements (*Awesome Us was fun, Awesome Us was interesting, Awesome Us gave me information I can use in my life, and I did strengths activities outside of the Awesome Us classes*) using a 5-point Likert scale that assessed frequency of agreement with each statement from 1 (*none of the time*) to 5 (*all of the time*). A mean programme rating score, calculated using the four items, ranged from 1 to 5. Percentage responses were calculated for each statement to gauge acceptability and utility of the programme to students.
Teacher Measures

Unless otherwise indicated, measures were administered to teachers in the week prior to the strengths programme (pre-test), in the week immediately after the programme (post-test), and in the week three months after the post-test (follow-up). All teachers completed measures of well-being, strengths use, strengths orientation, and a value-ranking of strengths. Intervention group teachers completed additional questions about acceptance and engagement with the strengths programme.

Well-being. The 14-item Warwick Edinburgh Mental Well-Being Scale (WEMWBS) was used to assess teacher well-being (Tennant, Hiller, Fishwick, Platt, Joseph, Weich, et al., 2007). Respondents use a Likert-type scale to respond to brief statements that assess emotional, social, and psychological well-being. The scale ranges from 1 (*none of the time*) to 5 (*all of the time*). Total scores range from 14 to 70 with higher scores reflecting higher well-being. Reliability evidence has been reported for the scale in terms of Cronbach’s alpha of .87 and .89 for UK student samples, and .91 for a UK general population sample (Clarke, Putz, Friede, Ashdown, Adi, Martin, ... & Platt, 2010; Tennant et al., 2007). Confirmatory factor analysis supported a single-factor scale structure with all items loading onto a single factor. Criterion validity has been demonstrated with significant positive correlations, (ranging from \( r = .53 \) to .74) with scales measuring positive affect, well-being, mental health, and life satisfaction, and significant negative correlations with a measure of ill-health \( (r = -0.53) \), (Flynn, 2010; Tennant, et al., 2007). Cronbach’s alpha for pre-test data in this study was .72.

Strengths use. Strengths use was assessed using the Strengths Use Scale (Govindji & Linley, 2007), previously described in the Student Measures section. The item that asked about work was not modified for teachers and was included in its original form: Work gives
me lots of opportunities to use my strengths. Cronbach’s alpha for the pre-test data in this study was .78.

**Strengths orientation.** The attitude of each teacher to using a strengths-approach in the classroom and in their wider work lives was assessed using the Strengthspotting Scale (Linley, et al., 2010). Developed to “assess individual differences in people’s strengths spotting capability, broadly defined” the scale was designed to be of use to any person with “responsibility or opportunity to identify and develop strengths in others” (p. 167). The 20-item scale comprises 5 sub-scales (ability, emotional, frequency, application and motivation) that assess an individual’s ability to recognise strengths, the emotional satisfaction or fulfilment they might get from doing that, the frequency with which they spot strengths in others, the breadth of domains across which they recognise strengths, and their motivation to notice strengths in others. It uses a Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Sub-scale scores range from 4-28, and total scores from 20 to 140, with higher scores reflecting a more positive attitude towards strengths spotting and more frequent practice. Reliability evidence using Cronbach’s alpha has been reported at .81 to .94 for the sub-scales (Linley et al., 2010). Principal components analysis of each of the five sub-scales showed all of the sub-scale items loading on a single factor. Criterion validity has been supported by evidence of significant positive correlations (ranging from $r = .31$ to $.55$) with agreeableness, optimism, positive affect, and strengths knowledge (Linley, et al., 2010). The authors acknowledged that the participant population used in this study (UK adults recruited through positive psychology networks) may be more knowledgeable about strengths spotting than the average population, and noted that further validation evidence is required. Cronbach’s alpha for the pre-test data in this study were .94.
**Strengths value ranking.** An exploratory aspect of this study included assessing the value or importance that teachers attach to certain strengths. Teachers were asked to rank a list of the 24 VIA character strengths “in order of how important you believe they are in the classroom. Another way of saying this is, rank them in order of how much you value each of these strengths in your classroom”. Teachers were asked to assign a ranking once only, (i.e., only one first, one second, one third, etc.). Although the list was presented as part of an online survey, teachers were encouraged to print out the list of strengths and do the ranking on paper, entering it online afterwards. This step was included as it was found that ranking online was difficult because the entire list was not always visible and it encouraged ranking a section of visible strengths only.

**Teacher acceptance of and engagement with the strengths programme.** Intervention group teachers were surveyed about their participation in and attitudes to the strengths programme, at post-test and at 3-months post-test. They were also asked about their use of programme information and their intentions to use programme information in their future teaching.

**Teacher attitude to the strengths programme.** At post-test intervention group teachers were asked to respond to four statements about their participation in and perceptions of programme activities using a Likert-type scale ranging from 1 (none of the time) to 5 (almost every day). An average of response to these four items was calculated to create a Strengths Programme Attitude score that ranged from 1 to 5, with higher scores reflecting a more favourable attitude towards the programme.

**Teacher strengths programme implementation.** At follow-up intervention group teachers were surveyed about their continued use of the programme during the follow-up period and their intentions for future use of it. They responded to two statements using a
Likert-type scale ranging from 1 \textit{(none of the time)} to 5 \textit{(all of the time)}. An average of responses to these two items was calculated to produce a Strengths Implementation score that ranged from 1 to 5 with higher scores reflecting higher levels of programme implementation.

**Procedure**

Ethical approval for the study was obtained from the University of Otago’s Ethics Committee and is included in Appendix C (Refs 10/061 and 10/179).

**Selection and Assignment**

Participating schools had previously formed a group of 9 schools that had undertaken a programme to enhance student social and emotional well-being, using playground activities and classroom discussion. Principals from each school in the group were invited to take part in the study and were provided with information about the programme which was distributed to teachers of the target year groups. Six schools agreed to participate in the study and all wished to have classes in the intervention group. One class from each of the six schools was assigned to the intervention group \((n = 140)\), which was comprised of three Composite Year 5/6, two Year 6, and one Year 7/8 classes. Three of the six participating schools had more than one class at each year level. One class from each of these schools was assigned to the control group, providing a year and SES-matched control group of two Composite Year 5/6, and one Year 7/8 classes, \((n = 56)\). The control group comprised three classes in contrast to the six in the intervention group. In the three schools that provided two classes to the study, assignment of class to intervention or control was made by the school principal. The rationale for assignment provided by the principals was as follows: one teacher who was not supportive of the strengths approach was assigned to the intervention group to gain further exposure and knowledge of using strengths with students, two teachers with similar teaching
styles and interest in strengths were asked to choose, and in the third school, assignment was made on logistical grounds to enable the Lead Teacher for Well-being to participate.

Study participants included classroom teachers and their students. Ten teachers are included in the study as one intervention classroom had two teachers. Mean age of the student participants for the control group was 10.13 years ($SD= 1.13$), and for the intervention group it was 9.78 years ($SD= 0.787$). The three classes which took part as controls were offered the opportunity and the resources to run the programme in their classes after the study completion.

Student and teacher focus groups (used to inform programme development), and a pilot group were recruited by approaching teachers and schools known to the researcher. Two schools offered one class each to participate in the focus groups, and another school offered to pilot the programme. For the student focus groups, each teacher selected three students of average ability and asked them to each invite another student. The focus groups thereby included six students known to each other and increased the likelihood of open discussion. All students and their caregivers consented to student participation. A similar approach was taken to recruitment for the teachers’ focus group. Three teachers from an interested school were invited to participate and to each invite another participant (some invited participants were unable to attend on the day of the teachers’ focus group and it proceeded with three participants).

**Consents and Study Incentives**

Teachers, students, and their caregivers all provided written consent to take part in the study. To encourage survey completion, vouchers to the value of NZ$150 were offered to the class that had the highest percentage of survey completion, with a further NZ$150 in vouchers for their teacher. It was stipulated that in the event of a tie between classes, the
winner would be drawn by lot. Consent forms and information sheets for students, teachers and their schools are included in Appendix D.

**Questionnaire Administration**

**Student questionnaires.** Students completed questionnaires at pre-test, post-test, and follow-up, online using computers at school. This option was selected over a paper and pencil survey because students in the focus groups indicated they regarded it as more attractive. It also enabled more time efficient and accurate data entry. A review of research comparing responses to paper and pencil and web surveys (Hayslett & Wildemuth, 2004) has found no evidence of *mode effects*, (i.e., differences in content of responses between web and paper-based surveys). Students received a briefing on the purpose and nature of the survey and confidentiality issues which reiterated the information provided in the information and consent forms (provided in Appendix D). Prior to the pre-test survey administration class teachers were asked to highlight areas of the survey where students might need clarification. Survey administrators read the instructions to participants and reviewed the survey in advance of students completing it. Students’ attention was drawn to areas of potential difficulty, and they were invited to ask the survey administrator, present throughout survey completion, if they did not know the meaning of any words. Each child was provided with a paper copy of the survey while it was reviewed before the pre-test survey, but not at subsequent survey dates. A small number of students (10) whose final online surveys were lost due to a data transmission problem repeated their surveys using a printed version of the online survey.

**Teacher questionnaires.** Teachers completed their surveys online at pre-test, post-test, and follow-up, with full briefing and instructions provided online. Prior to completing
the pre-test survey, teachers were also provided with a printed list of the VIA strengths to facilitate ranking strengths online.

**Teacher Training**

The researcher who developed the programme provided a 90 minute briefing session for intervention group teachers and a facilitation support teacher from each school. Six of the class teachers and four of the six support teachers attended the programme briefing. The session outlined the structure of the programme, the role they would be asked to play, and optional class and homework activities. The aims of the programme and its hypotheses were not discussed with teachers. The teachers’ role was to observe and support their students and act as an additional facilitator during small group exercises. Teachers were also presented with additional activities that they were encouraged to use with their classes outside the programme sessions.

Teachers in both the intervention and control groups had all previously received introductory training in positive psychology and had completed their own strengths inventories online using the VIA. They were familiar with the VIA classification and with the names of the strengths, although none of the teachers had previously conducted specific strengths education with their classes.

**Delivery of the Intervention**

The development and content of the intervention programme is described in detail in Chapter 5. The strengths programme was delivered to the six classes of students over the same time period, with each class completing a 90-minute session each week for six weeks with a further 90-minute follow-up session a month later. Of the three students whose caregivers refused consent two attended another class at the same year level during this period and one participated but did not complete any surveys. The classroom teacher and a
facilitation support teacher from the school were present at each session along with the researcher, who was responsible for delivery of the programme. Teachers acted as additional facilitators for the programme during small group and individual exercises. Each session was clearly structured with a timetable that specified activity and discussion in 10-15 minute blocks. Each class received the same programme materials and slide presentation, with teaching stories and discussion points used in each group. Video clips were utilised for each class group. During one session different clips were selected for the Year 5/6 group than the Year 7/8 group, but overall, similar clips were used throughout the programme. Teachers were also asked to indicate during each session whether they could commit the class to additional programme activities for that week. Each session of the strengths programme was videotaped to enable assessment of programme fidelity. Programme materials are available on request from the researcher.
CHAPTER 5: Development of the Awesome Us Strengths Programme

Chapter Overview

Existing research on strengths interventions and other well-being focused research provide several specific findings to influence future interventions (see Chapter 3). This chapter describes how these findings shaped the intervention developed for the current study. The first section outlines the study framework and rationale for selecting a controlled trial with a teaching as usual control group. The next section describes how research findings influenced the intervention development and shaped its structure and style. Feedback is presented from student and teacher focus groups which discussed concepts and activities planned for the intervention programme and elicited their preferences for programme structure, timing, and duration. Learning objectives and components of the strengths programme are then outlined, followed by feedback on a pilot programme and changes made to the intervention. A detailed description is then provided of the Awesome Us strengths programme, the intervention delivered to participants in the study.

Study Framework

The aim of this research was to examine the individual and group effects of a programme delivered to groups of students, and to trial some novel strategies suggested by previous research, in particular, the use of strengths spotting in self and others and strength-focused self-concordant goal-setting. The programme explicitly aimed to encourage students to work together. It included interpersonal discussion and support such as sharing stories of past strengths use, discussing personal strengths, and identifying how strengths could be used to deal with challenges. Although similar discussions feature in many group-delivered strengths interventions, this study was novel in explicitly acknowledging interpersonal
discussion and support as intervention strategies, and assessing the impact on the group and individual relatedness.

Primary school classes constitute intact groups which work together over a sustained period of time. As such they provide a suitable and realistic environment in which to study the impact of a strengths intervention on group and individual functioning. The decision to work in schools brings with it certain practical constraints including working with school terms and yearly class changes. It also influenced the design of the control condition for the study. A strengths programme which did not include interpersonal discussion or support could have been created as a comparison intervention, for example, an on-line strengths intervention with no classroom discussion. However, given that learning in schools is generally a group activity, it was decided that this was an artificial comparison and one not likely to be replicated in a real-life classroom. A control group of classes undergoing teaching as usual was chosen as an appropriate comparison that could be used by schools considering implementing a strengths programme. It was acknowledged that this research would provide a controlled trial of a group-focused strengths programme, and that it would not be possible to isolate or compare the effect of strengths without interpersonal support.

From a research perspective, the intervention would ideally have also included a positive placebo-control group which received the same time and attention as the intervention group. Such a control group would have furthered understanding of whether or not strengths were in fact the active ingredients in the intervention. However, it would also have required separate programme development, facilitators, and class time. Unfortunately, due to logistical, budgetary, and time constraints, a positive placebo-control group was beyond the scope of this study.
Incorporating Research Findings in Intervention Development

Awesome Us aimed to build on previous strengths research and to incorporate relevant learning from other fields. The rationale for the programme is based on the review of existing research previously discussed which led to the view that:

- selection of a strengths classification should consider the relevance of a classification to participants and their objectives in using it;
- strengths interventions have the potential to enhance relationships;
- a broad range of outcomes could be assessed, particularly interpersonal or group effects of a strengths intervention;
- longer interventions have tended to produce larger effects than shorter ones, and therefore, it should be considered how shorter interventions can “extend their influence” beyond the duration of the intervention;
- universal interventions for school children cannot assume motivation to participate and therefore must deliberately aim to build it;
- strengths use is associated with need satisfaction and goal progress, which have been shown to influence well-being directly; and
- a range of intervention strategies could be considered for different populations rather than focusing solely on developing an individual’s top 5 strengths.

In consultation with participating schools it was agreed to use the VIA strengths classification as it was already familiar to schools and they found it easy to link the strengths to their school values. The participating schools expressed the view that this would make discussion of the strengths more accessible and relevant for teachers and students alike.

The programme was targeted for use in classes because they are the primary relationship grouping in the school. Primary and intermediate class groups work together for most of the
day and the classroom is the forum which provides most opportunities for noticing strengths in each other and discussing strengths. The relationship between students and their class teacher is an important one and a supportive student-teacher relationship can positively influence academic engagement and achievement (Furrer & Skinner, 2003). Therefore, it was considered essential for teachers to learn about their students’ strengths and be capable of noticing them during the day.

The classroom structure also provides a suitable forum for assessing group relationships and the group effects of a strengths intervention. A supportive classroom group may serve to enhance the effectiveness of a strengths intervention for an individual. In the strengths programme students can help each other to identify their strengths. This process helps build trust between students, an understanding that “there are others like me”, a sense of competence that they can help others, and that their strengths are recognised.

Brief programmes are preferred by most schools; therefore, to ensure longer-term effects, programme skills need to be used beyond the programme’s duration. An important goal of the strengths programme was to enable individuals and the group to develop habits and rituals that extend to everyday functioning in a variety of contexts. Teachers were provided with suggested activities to do during the school day so that learning would go beyond the programme and into the everyday routine of the classroom.

The need to create a sustainable intervention intersected with the need to build student motivation for a universal intervention. In fact, building participant motivation for the programme could be seen as an essential first step; the programme would only continue beyond its delivery period if it had first successfully captured the interest of and engaged participants. Hence, the programme was designed to provide classroom support (from both
teacher and peers) to make it easier for participants to continue to carry out the programme activities.

The programme was designed to support students’ needs for autonomy, competence and relatedness and to build their intrinsic motivation to participate. Students were given choices regarding the activity format, goal selection and their work partners. Teachers were present to learn about and work with children on their strengths, thus fostering teacher understanding of the child and building relatedness. Activities related to discovering and naming strengths were expected to enhance students’ sense of competence, with peer acknowledgement of strengths anticipated to further enhance that sense of competence. In Awesome Us, strengths were viewed as instrumental rather than an end in themselves. Setting meaningful goals was prioritised rather than specific strength development per se, reasoning that an individual could choose to use whatever strengths seemed most useful to them to pursue a valued goal.

Although previous strengths interventions had examined strategies of developing an individual’s top 5 strengths (Seligman et al., 2005), and in some cases also weaknesses (Rust et al., 2009), little attention had been paid to strategies of noticing strengths in self and others. This strategy was adopted as part of the current study’s programme for several reasons. Students may be less likely to habituate to noticing their own strengths if they are reminded about them by someone else, and having one's strengths acknowledged is likely to build a positive relationship between the students. If a cycle of commenting on other’s strengths was developed in a classroom, it could potentially extend the life of the programme and, over time contribute to a change in classroom behaviour and ultimately, class climate.
Focus Groups with Teachers and Students

To determine if the planned approach would be appealing or appropriate for students aged 9-12 years, two student focus groups were conducted, each with six students. One teacher focus group was also conducted, with three teachers. All focus groups were conducted by the researcher. Teachers each received an incentive payment of $20 for participation and students each received vouchers for $10. Ethical approval was gained for this process from the Ethics Committee of the University of Otago (Ref. 10/061, included in Appendix C). In the focus groups, information about participants’ attitudes towards strengths and the structure and process of the proposed programme was obtained. The timing and duration of the programme, presence of the classroom teacher, and ability of the students to interview, probe and reflectively listen to their peers (required skills for the proposed activities), were discussed with both teachers and students. Skills were assessed through sample activities conducted during the student focus groups. The findings from these focus groups are summarised below.

Findings from the student focus groups. Students were keen to learn about their strengths and those of their peers and wanted to do this with their classroom teacher present. They thought that a teacher who knew a student’s strengths would “push you to your goals” or “can give you more of what you like”. They expressed a clear preference for a programme during the school day to avoid conflicts with after-school activities and to gain a break from normal class routine.

All the students were familiar with goal-setting as it is used regularly in class, sometimes requiring students to choose from a list of “suitable goals”. Students preferred to choose and set their own goals and “feeling good about it” was regarded by most as sufficient
reward for goal achievement. While some students are natural goal-setters, others work towards desired objectives without labelling them as goals. Skill and motivation levels varied widely as did the time-frames of the goals pursued, ranging from several weeks to many years (e.g., representing their country at a sport).

Students demonstrated that they were capable of carrying out the proposed activities, provided they received adequate instruction and modelling. The focus groups tested a proposed activity which required students to interview each other and probe responses. It was clear at the first focus group that although students enjoyed the activity, they needed an example to explain how the process worked and to help them ascertain if they had achieved their objective. Three example student vignettes with instructions and possible interviewer prompts were provided in the second group. In both groups students enjoyed being interviewed, felt well listened to and generally thought their partners probed and questioned well. Although the students worked at different levels and achieved different levels of detail in their interviewing, all reported that they learned something new from it.

Maintaining interest and motivation was an issue; students’ interest was more easily held when they had specific roles and tasks that they understood. Students’ interest in finding out about their own strengths was high, as was their commitment to working with their partners, but attention deteriorated when they did not have a role that required their focus and action. Students were asked to link the activity strengths identified for group members to a list of VIA character strengths. It was clear that students would need greater familiarity with the VIA strengths; clear examples, instructions and adequate time; and to do the linking exercise only for themselves, with a friend to discuss it with if desired.

Students found it easy to individually list the strengths that are most frequently recognised and rewarded in their classroom. The strengths most frequently mentioned were
kindness (selected by 75% of students); honesty (67%); persistence (50%); teamwork; fairness, and friendship (42% each); leadership, enthusiasm, and self-control (33% each); and love of learning and creativity (25% each). Although all students expressed a preference for online survey completion, their review of a number of well-being questionnaires indicated that they would need a clear briefing and time for questions about wording. This meant that a supervisor would be required throughout the process, to answer questions and provide assistance where necessary.

**Findings from the teacher focus groups.** The small number of teachers in the focus group is acknowledged as a limitation, but it should be noted that these were very experienced teachers of Years 6 and 7 students, and that two other teachers reviewed the programme prior to pilot. Teachers were keen that classroom teachers be involved in the programme and learn more about their students, whether as observer, facilitator or participant. They felt that students would have the cognitive ability to perform all of the proposed tasks, although they commented that students with disorders on the autism spectrum might find activities which require empathy or probing another’s experiences very challenging. Teachers noted that, for many children, spotting strengths in others might be easier than identifying their own strengths because reviewing each other’s work and listening and giving feedback are part of normal class routines. Teachers indicated that goal-setting is an integral part of classroom behaviour and that all students would have experience in this area, although skill levels could vary widely with some students needing help to create steps for a goal. For all of the activities, teachers commented that students benefit from clear step by step instruction and modelling and that they learn by doing.

Unlike the teachers in the intervention, teachers in the focus group were not familiar with strengths in the classroom and highlighted potential problems rather than possibilities.
Specifically, they were concerned that all children and “not just the bright ones” should feel valued by the process and, that some children might find having their strengths discussed embarrassing, or not enjoy having attention focused on them. However, they acknowledged that students enjoyed reflecting on each other’s good qualities and valued the positive comments of their peers; some students in Year 13 (age 18) still had the caring place mats filled with positive comments they made each other in Year 7 (age 12).

The teachers were emphatic that each classroom culture is overwhelmingly created by the teacher, and that adults and students alike can sense the difference in classes as they move through the school. These teachers believed that classes with a good culture shared respect for each other, empathy, fairness, and consistency. Without discussion, they easily selected from the list of 24 VIA strengths the top 5 that they value and reward in their classes. Each of the three teachers mentioned persistence, humour, and creativity, with love of learning, kindness and enthusiasm listed by two teachers. Leadership, self-control and curiosity were each listed by one teacher only. Interestingly, students recognised seven of the nine strengths selected by the teachers, but did not identify that humour or curiosity were valued or rewarded in their classes. This suggests that both teachers and students are aware that certain strengths receive greater attention and acknowledgement in the classroom.

**The Pilot and Modification of the Strengths Programme**

The Awesome Us programme, including all resources and the associated survey was piloted with a group of 24 Year 6 students (age 9-10 years; 11 male, 13 female) at a primary school which had agreed to take part in the study. Participants in the pilot left the school before the intervention began and so were not part of the subsequent intervention or control groups. The programme was delivered by the researcher with facilitation assistance from the classroom teacher and an assistant facilitator (also a trained teacher), both of whom received
an individual briefing on the programme prior to the pilot. Students completed feedback questionnaires about the pilot and six students completed the online assessment survey proposed for the main study. Student responses from the on-line survey provided valuable information confirming that students were capable of responding to all scales included, and of completing surveys in the anticipated timeframe (15-20 minutes), with no patterns of extreme responding observed.

The learning objectives of the strengths programme and the components of both the pilot and the final version of the Awesome Us strengths programme are set out in Table 5.1. The overall objectives for the programme were to assist students to identify their activity strengths (defined for students as “activities you love doing and do well”) and character strengths (defined as “ways you like to behave or think, which often reflect important values”); to teach and promote strengths spotting in self and others; and to promote a view of strengths that encouraged students to view all strengths as potentially available to them in pursuit of their goals and in dealing with challenges. Detail on each of the programme components is provided in the description of the final programme, in the following section. Both the pilot and final version of Awesome Us were delivered over 10.5 hours. The pilot was delivered over three full morning sessions, while the final version of the programme was delivered in six weekly sessions of 90 minutes duration. The follow-up session was delivered in one hour for the pilot and over 90 minutes in the final programme. The strengths programme was modified following the pilot before the full trial was conducted.
### Table 5.1
*Learning Objectives and Components of the Awesome Us Strengths Programme*

<table>
<thead>
<tr>
<th>Learning Objectives and Supporting Practices</th>
<th>Awesome Us Programme Components (6 Sessions)</th>
<th>Pilot Programme Components (3 Sessions)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teach and promote strengths spotting:</strong></td>
<td>• How to spot strengths</td>
<td>• As per sessions 1-2 of Awesome Us.</td>
</tr>
<tr>
<td>• notice strengths in others and self; and</td>
<td>• Activity: Collage of “Me at My Best”</td>
<td></td>
</tr>
<tr>
<td>• notice where and when strengths are used.</td>
<td>• Naming Activity Strengths displayed.</td>
<td></td>
</tr>
<tr>
<td><strong>Help students identify and “own” their strengths:</strong></td>
<td>• Activity: “3 Rolled Into 1”</td>
<td>• As per sessions 3-4 of Awesome Us, except Strengths Posters were created in place of strengths superheroes.</td>
</tr>
<tr>
<td>• distinguish between <em>activity</em> and <em>character strengths</em>;</td>
<td>• Naming the activity strengths displayed</td>
<td></td>
</tr>
<tr>
<td>• notice activity strengths used in past experiences; and</td>
<td>• Identify where else the strengths could be used.</td>
<td></td>
</tr>
<tr>
<td>• identify how character strengths support activity strengths.</td>
<td>• Introduction to character strengths</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Link activity strengths to character strengths</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Identify own character strengths.</td>
<td></td>
</tr>
<tr>
<td><strong>Encourage a flexible view of strengths:</strong></td>
<td>• Discuss own character strengths with friend</td>
<td></td>
</tr>
<tr>
<td>• present strengths in a flexible way (e.g., as <em>used more or less often</em> or being <em>more or less like you</em>) rather than in a hierarchy;</td>
<td>• Identify class character strengths</td>
<td></td>
</tr>
<tr>
<td>• encourage strengths use in pursuit of meaningful personal goals and friendships across different life domains; and</td>
<td>• Use strengths to deal with a personal challenge</td>
<td></td>
</tr>
<tr>
<td>• identify how strengths can be used to deal with current challenges.</td>
<td>• Design a strengths superhero.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Strengths are for using</td>
<td>• As per sessions 5-6 of Awesome Us except second goal was optional and included choice of “helping someone be happier” or building a friendship</td>
</tr>
<tr>
<td></td>
<td>• Information on goal setting and sticking to goals</td>
<td>• Goal reminders were not created.</td>
</tr>
<tr>
<td></td>
<td>• Set a personal goal and select strengths to support goal pursuit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Create goal reminders.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The role of friendship and how to support it</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Set a friendship goal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Create personal strength posters/shields.</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Detailed descriptions of programme components are provided in the final section of this chapter.
Feedback on the pilot programme and subsequent programme changes.

Participants in the pilot completed a Student’s Pilot Feedback Form (provided in Appendix E) during a 1-hour feedback session with the researcher. All students attended the feedback session, with 21 completing the questionnaires fully. Students answered quantitative questions about the difficulty, interest, and usefulness of the major components of the programme; frequency and domains of strengths use; and support from friends for strengths use. Difficulty, interest, and usefulness were rated on a 5-point Likert-type scale (Difficulty: 1 = very easy; 3 = can do it OK; 5 = very hard. Interest: 1 = very boring; 3 = OK; 5 = very interesting. Usefulness: 1 = no use to me; 3 = a bit useful; 5 = really useful to me). Five options were provided to rate the frequency of strengths use and friend support (never, once a week, several times a week, almost every day, and every day). Students could comment on strengths use across a number of domains and could select multiple responses (home, at school, with my friends, in my sport/hobbies, or, not at all). Students were also asked open-ended or text response questions about their participation and suggestions for change to the programme. The survey completion was followed by discussion which meant that feedback topics could be discussed, probed, and clarified as necessary. The classroom teacher and the additional facilitator who assisted during the pilot programme were interviewed individually and their comments noted. This section summarises student and teacher feedback from the pilot programme, and the consequent changes made to the strengths programme.

Student Feedback on the Pilot Programme. Students enjoyed the strengths programme. Ninety five percent of students commented that they would recommend it to their friends; reasons given included that it was fun and they learned a lot about themselves. Means and standard deviations for student perceptions of the difficulty, interest, and usefulness of each component of the programme are presented in Table 5.2.
Table 5.2

Students Results for Difficulty, Interest, and Usefulness of Awesome Us Components.

<table>
<thead>
<tr>
<th>Programme component</th>
<th>Difficulty (from 1= very easy to 5= very hard)</th>
<th>Interest (from 1= very boring to 5= very interesting)</th>
<th>Usefulness (from 1= no use to me to 5= really useful to me)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Strengths spotting</td>
<td>2.8 (1.5)</td>
<td>3.2 (1.3)</td>
<td>3.2 (1.1)</td>
</tr>
<tr>
<td>Me at my best collage</td>
<td>1.4 (0.8)</td>
<td>4.0 (1.4)</td>
<td>3.3 (1.4)</td>
</tr>
<tr>
<td>Three rolled into one</td>
<td>2.7 (1.0)</td>
<td>2.7 (1.1)</td>
<td>2.8 (1.3)</td>
</tr>
<tr>
<td>Identifying your character strengths</td>
<td>3.2 (1.4)</td>
<td>3.1 (1.4)</td>
<td>3.0 (1.2)</td>
</tr>
<tr>
<td>Class strengths</td>
<td>2.0 (1.0)</td>
<td>2.9 (1.2)</td>
<td>2.7 (1.3)</td>
</tr>
<tr>
<td>Strengths superheroes</td>
<td>2.6 (1.3)</td>
<td>3.5 (1.7)</td>
<td>3.4 (1.7)</td>
</tr>
<tr>
<td>Strengths in a challenge</td>
<td>2.9 (1.1)</td>
<td>3.0 (1.1)</td>
<td>3.5 (1.1)</td>
</tr>
<tr>
<td>Setting a personal goal</td>
<td>2.8 (1.1)</td>
<td>3.3 (1.1)</td>
<td>3.5 (1.1)</td>
</tr>
<tr>
<td>Setting a goal to help someone</td>
<td>2.6 (1.4)</td>
<td>3.0 (1.1)</td>
<td>2.9 (1.2)</td>
</tr>
<tr>
<td>Setting a friendship goal</td>
<td>2.4 (1.2)</td>
<td>3.6 (1.1)</td>
<td>3.0 (1.3)</td>
</tr>
<tr>
<td>Personal strength poster</td>
<td>1.9 (1.1)</td>
<td>4.0 (1.5)</td>
<td>3.6 (1.7)</td>
</tr>
</tbody>
</table>

Note. Details on each programme component are provided in the final section of this chapter.

Overall, students reported that the activities in the programme were not difficult for them. Only identifying character strengths scored a difficulty rating above 3.0, which corresponded to feeling capable of doing the exercise. Students’ greatest challenges concerned rating their character strengths from a list, and using strengths to deal with a personal challenge. Interestingly, in some cases when students found an activity challenging, they also described it as useful to them, suggesting that their efforts had been worthwhile. Using strengths in a challenge, setting a personal goal, and learning to spot strengths were among the most challenging and most useful exercises. The collage activity, personal strengths poster, personal goal, strengths superheroes, and learning to spot strengths were among the most interesting and most useful exercises. This feedback suggested that students were interested in a range of the exercises and found them useful, even when they were challenging.
One student described enjoying the superheroes activity because “there were no rules and it was fun”. Using funny, moving, or outrageous video clips to highlight teaching points or stimulate strengths discussion was very effective and an aspect of the programme which students mentioned in their free text responses as something they wanted to remain in the programme. A number of students described learning something valuable about themselves and their classmates, for example, “that I am creative”, “my friends will help me when I need them”, “I can set my mind to something and do it”, “E is very independent and never gives up” and “my friends are awesome”. Changes to the programme suggested by students included having more time for activities and less time listening to the presenter, being able to do activities without having to write about them afterwards, and not having to rank their strengths on a list.

Many students reported that having time to think about how to set and pursue goals was valuable. Finding a goal they really wanted was relatively easy for most students but most faced challenges in pursuing their goals. Challenges included getting busy and forgetting about the goal, school homework or after-school activities taking up free time, friends distracting them, or siblings “getting in the way”. Students brainstormed strategies to overcome their challenges and agreed that having a goal reminder would be an important aid. Friends who shared a common goal or offered encouragement were regarded as a big support in goal pursuit as were supportive teachers, being self-focused, or having a goal that was based at school. Frequent reminders, encouragement, and support were regarded as the main factors facilitating goal pursuit.

At the follow-up session approximately 60% of students reported making positive efforts with their personal goal while only 30% were making the same effort with their optional goal of being a good friend to someone or helping someone become happier. Over
50% of students reported satisfactory attainment with their personal goal, but only 10% with their optional goal. Whereas only 20% of students reported not making efforts with their personal goal, that rate rose to 60% for the friendship goal. Similar results were obtained for students who completed the online survey. This was despite the fact that the friendship goal ranked highly for students as an interesting exercise, and suggested that perhaps making this goal optional had inadvertently communicated to the students that it was less important than the personal goal.

Student results for frequency and range of strengths use are presented in Tables 5.3 and 5.4 respectively. Over 80% of students indicated that they used and noticed their strengths several times a week or more and no students reported never using their strengths. These results suggest that students were aware of their strengths and of using strengths often, however it is also possible that students may have displayed a positive response bias.

Table 5.3
*Frequency of Student Reported Strengths Use*

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>% Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Once a week</td>
<td>4</td>
<td>18.2</td>
</tr>
<tr>
<td>Several times a week</td>
<td>9</td>
<td>40.9</td>
</tr>
<tr>
<td>Almost every day</td>
<td>5</td>
<td>22.7</td>
</tr>
<tr>
<td>Lots each day</td>
<td>4</td>
<td>18.2</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Twenty eight per cent of students reported using their strengths in all of the domains specified (school, home, friends, support/hobbies), while a further 43% of students reported using their strengths in more than one domain. Twenty nine per cent of students reported noticing and using their strengths in only one domain (with no predominant domain reported), which suggests that for some students, strengths are very closely associated with
particular areas of their lives such as interpersonal relationships and academic or sporting pursuits.

Table 5.4

<table>
<thead>
<tr>
<th>Domain</th>
<th>Frequency</th>
<th>% Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Single domain</td>
<td>6</td>
<td>28.5</td>
</tr>
<tr>
<td>School and sport</td>
<td>2</td>
<td>9.5</td>
</tr>
<tr>
<td>Home and friends</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>School, home, and sport</td>
<td>5</td>
<td>23.8</td>
</tr>
<tr>
<td>School, friends, and sport</td>
<td>1</td>
<td>4.7</td>
</tr>
<tr>
<td>School, home, friends, and sport</td>
<td>6</td>
<td>28.5</td>
</tr>
<tr>
<td>Total</td>
<td>21.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Note. Domains specified were: at school, at home, with my friends, in my sport/hobbies, and, not at all.*

Most students reported that friends did not assist them to notice their strengths. Almost 60% of students reported that their friends either never helped them notice their strengths or did so once a week. Only 9% of students reported that their friends would help them notice their strengths almost or every day. This pattern was repeated when students were asked if their friends assisted their goal striving: 23% of students said their friends never helped them, while a further 41% reported receiving support once a week, and only 9% of students reported receiving goal assistance from their friends every day. These findings suggested that students would require encouragement and support to notice strengths in each other, to share goal details, and to support each other’s goal pursuits.

Gender differences in the pilot feedback were analysed: mean scores for the difficulty, interest, and usefulness of programme components were 2.36, 3.06, and 2.91 respectively for boys, and 2.50, 3.36, and 3.30 respectively for girls. Difficulty scores were below 3.0, indicating students felt competent to do the activities, interest scores were above 3.0, indicating students found the programme reasonably interesting, and usefulness scores
indicated that although girls found the programme reasonably useful, boys found it slightly less so. However, student’s t-tests ($p < .05$) indicated that gender differences were statistically significant for only six of the 33 aspects assessed, and indicated a balance of gender preferences. Boys reported that they found the strengths spotting easier ($p = .005$), and the collage exercise more difficult than girls did ($p = .007$); they reported lower interest than girls in the personal strengths poster ($p = .004$), but found the “Three into One” exercise significantly more interesting than the girls did ($p = .009$). Rating character strengths ($p = .001$) and the personal strengths poster ($p = .006$) were regarded as less useful to boys than girls. Due to the large number of $t$-tests involved, a Bonferroni correction was subsequently applied ($p < .0015$), and at this level significant gender differences were observed in only the usefulness of the rating character strengths activity ($p = .001$). Furthermore, qualitative feedback from boys indicated that overall they had found the programme interesting and useful, and for six of the 11 programme components there were no significant gender differences in perceived difficulty, interest, or usefulness. Detail of gender differences in pilot feedback is included in Appendix F.

**Teacher Feedback on the Pilot Programme.** The classroom teacher and assistant facilitator who participated in the pilot were interviewed and their feedback is summarised in this section. They noted that students enjoyed the programme and that it provided a good balance of *sitting and doing*. Due to concerns with students’ ability to stay focused and absorb the material, it was recommended that session times be reduced to 90 minutes and spread over six weeks rather than three. They also considered that students would benefit from having a break for *brain gym*, a run outside, or a game to re-focus or raise energy for the next task. The class normally taught by this teacher included Year 5 and Year 6 students and it was the teacher’s view that Year 5 students would be equally capable of dealing with the concepts and activities presented. The issue of gender suitability was raised, with concerns
that the programme’s discursive nature might appeal less to boys than girls, and the suggestion was made that the programme be tailored and delivered separately to gender groups. Although some gender differences were observed in feedback, they occurred in a small number of activities and it was considered that these could be modified to reduce difficulty or enhance interest. Even where differences were observed, exercises were all within acceptable levels of difficulty, interest, and usefulness. An important goal of the programme was to enhance class climate and therefore it was considered important to trial the programme with a full classroom group. This feedback was noted however, and it was decided to review programme effects by gender following the intervention.

Teacher feedback also noted the popularity of the video clips with students and encouraged their continued use. Teachers recommended the facilitator demonstrate activities with a student to help with instruction effectiveness, in addition to providing worked examples of each exercise in the workbook. Demonstrations could also use videotaped examples or role play with a student from the class. To allow more time for discussion and learning about strengths, the teacher feedback suggested removing activities like the creation of strengths posters and strengths superheroes from the programme and asking teachers to do those during normal class time between sessions. Although this feedback was considered, it was regarded as important to include these enjoyable activities in the programme sessions to maintain participant motivation and engagement.

**Changes made to the strengths programme following the pilot.** Students reported that the activities and focus of the programme were enjoyable and worthwhile and the overall structure of the programme was retained with some changes. Following the pilot, the key changes made were designed to make it easier for students to focus, follow instructions, and work effectively together. To make it easier for students to stay focused and concentrate, each session was reduced from three hours to 90 minutes and the programme was extended
over six weeks rather than three. In the pilot, the class at times split into two groups working on different activities, a strategy which reduced resource requirements (e.g., photo collage sets). To simplify instructions and facilitation, the whole class now did the same exercises together. The student workbooks were extensively modified to make them easier for students to follow. Instructions for each activity and prompts were included with each worksheet to make it easier for students to consult these during each exercise, and demonstrations of activities with a student were planned before each activity. The facilitator provided specific examples and clear, concrete instructions. Students now worked in pairs rather than triads so that each role required active engagement throughout the exercise. Students were also encouraged to work with friends so that friendship pairs had opportunities to practice strengths spotting during the programme. A model recommended by classroom teachers was adopted whereby students often worked in pairs with some individual time for reflection or individual activity and then shared their thoughts with their partner. In response to students’ comments that they wanted less writing, workbooks were streamlined to eliminate any double-noting of strengths or transferring findings from one place to another, and more discussion between students and oral feedback was used as an alternative to writing.

Other changes were made to the programme to work more effectively with the students’ level of cognitive development. Some younger students found it challenging to view themselves from an outside perspective and prompts were included to encourage this, (e.g., *How would someone else describe you if they saw you doing this?*). Some students were capable of more sophisticated reflection and analysis than others. Prompts for activities such as creating a strengths superhero were modified to first provide simple prompts, and then more challenging ones for those students who wanted to consider them.
The strengths identification and ranking process was modified to make it more tactile, physical, and easier. Students were asked to sort a set of strengths cards into piles of *like me* and *not like me* with a friend. Strengths were written onto a strengths wheel, which provided a ranking of *most like me* to *least like me* but was deliberately not displayed in a list form. The option of creating a personal strengths shield was added to the strengths poster exercise. It was anticipated that these changes would make the activities attractive to boys as well as girls.

To encourage goal and strengths thinking prior to goal-setting students were asked to think about their heroes and the strengths they use. To encourage students to move beyond typical classroom achievement goals such as “getting better at my times tables”, students were asked to consider their *best possible use of a strength*, which encouraged imagination and consideration of genuine desires. The revised programme removed the *help someone become happier* optional goal. Both the personal and friendship goals were retained and given equal priority. The importance of friendship to everyday well-being was also discussed. Forgetting about their goals was identified by students as the biggest stumbling block to goal achievement, and so creating and decorating goal reminders was included in the final programme, along with discussion of the best place to display them at home or school. Students were also encouraged to identify friends who could support them in their goal pursuit and to share their goals with them.

Some unexpected ideas and opportunities arose during the pilot, which were incorporated in the final programme. Students were very engaged by discussions of current events from a strengths perspective (e.g., students discussed the Chilean miners who were trapped down a mine for several months, considering the strengths that would help the miners or their relatives cope with the challenge). *A strengths in the news* spot was introduced to
start each session and encourage strengths spotting. To build on students’ curiosity and interest in each other’s work time was included in the final programme for students to move around and look at collages, superheroes, or strengths posters. Students’ enjoyment and engagement with the video clips used meant that a wider range were sought for the programme and tailored to the different age groups. Teachers identified ways in which they could incorporate the programme into their classes and some of these were included in the final programme; for example, after each class identified their class strengths, they graphed it in maths class prior to the next session. Discussion with students in this age group led to the programme being named Awesome Us; a title that emphasised the group aspect of the programme and received positive feedback from students.

The Awesome Us Strengths Programme

The final format of the Awesome Us strengths programme was delivered in six 90-minute sessions with a 90-minute follow-up session one month later. Details of each of the sessions follow.

Session 1, Awesome Us Strengths Programme

Students were introduced to the concept of strengths and to the overall aims and structure of the programme. They were taught to distinguish between activity strengths (defined for students as activities you love doing and do well) and character strengths (defined as ways you like to behave or think which often reflect values that are important to you). Character strengths were described as underpinning and supporting activity strengths. For example, someone with an activity strength of competing might have character strengths of persistence, self-control, and courage, which help them keep on competing, even after defeat. The students watched video clips of strengths in action and discussed the difference it makes to focus on strengths rather than on what is wrong with a person or situation. One clip
illustrated how important things are easily missed when one is not looking for them.

Students were taught that strengths often lie in the aspects of an activity that is most enjoyed, or the best bits. It was explained that once they knew which activity strengths they possessed, they could then work out how to use them in other areas. Students reviewed examples of different students who enjoyed the same activity but did it for very different reasons. For example, of three students who loved swimming, one enjoyed competition and racing, another loved being part of a swim team, and the third loved the bio-mechanics of swimming and working out which stroke changes would produce the greatest increases in speed.

Before working in pairs to discover their own strengths, students discussed the skills that strengths spotters require. These included being curious about the person they are working with, listening, asking questions, and being willing to dig and probe to find out more about what the person really loves about their favourite activities. Students discussed the fact that people have different strengths so should not be expected to enjoy the same activities. Respecting other people’s preferences and perspectives was part of the skill of a strengths spotter. Before each activity students watched video clips of students explaining how they did the activity and what they learned about themselves.

Students completed a strengths discovery activity in which they created a collage of “Me at My Best” (using a set of laminated photographs selected for this age group and for this exercise). They discussed their collages in pairs, reviewing the kinds of things they were doing at their best, and labelling the activity strengths they displayed in those moments. At the end of Session 1, students shared their activity strengths, creating a list of classroom activity strengths that included hugging people, doing tricks on my skateboard, caring for my pets, knowing where to go with the ball in soccer, being patient when I’m fishing, and making
cards and giving them to people. The session ended with a brief review and class and homework for the week. This was to practise noticing strengths in themselves, and in others at school and at home. Teachers were encouraged to incorporate noticing strengths in their reviews of the day with students.

Session 2, Awesome Us Strengths Programme

Students discussed events in the news from a strengths perspective, (e.g., responding to questions such as, “What strengths would you want to draw on if you were in the Christchurch earthquake, or if you had family who were there?”). Students shared their strengths spotting and strengths use over the past week. This news and review format was followed for the remaining sessions. Each student received an A4 photograph of their collage from the previous week and was asked to put it somewhere they could see it often. Many students taped their collage photographs to the inside of their desk lids so they could see the photograph during the day.

Students completed a second exercise to help identify their strengths. This activity was adapted from an exercise developed by Jenifer Fox (2008) and was called “3 Rolled Into 1”. Students watched a video clip of a student describing how they had done the exercise and what they found. Working in pairs, students identified their favourite hobby, sport, and school subject. They then identified the best bit of each favourite activity. It was explained that the best bits are the part they enjoy most, feel most excited about, or get most satisfaction from, and that the best bits are often where strengths are being used. Students named the strengths they thought were being used in the best bits. The students’ challenge was to create a new activity which had all three of their best bits. There were no limits or constraints on what this activity could be. After a group discussion of the new activities they had created, students paired up to name the activity strengths they had identified in themselves, and
discuss other ways they could use these strengths. During the session review, students were asked to share the most interesting thing they had learned about themselves or someone else and one new way they could use a strength of theirs. Their homework for the week was to continue strengths spotting and to review the character strengths posters to be placed in their classroom over the coming week. Character strengths were described as “ingredients in your activity strengths” and students were asked to notice which character strengths might be ingredients in their activity strengths.

**Session 3, Awesome Us Strengths Programme**

The session began with news and review of the week. Students were asked if they were able to determine which character strengths were ingredients in their activity strengths. Students were then introduced to each of the VIA Character Strengths. As each strength was discussed, students identified examples of that strength and explained it in their own words. Students watched a video clip that highlighted using one’s strengths, in a very individual way, to achieve personal goals, reinforcing the point that there is no set way to use strengths.

In an activity designed to demonstrate how activity strengths are linked to character strengths, students were asked, “What character strengths does it take to carry out your activity strengths?” Students wrote their activity strengths on a page and each received a set of character strengths cards. They used the cards to select the strengths they believed enabled or helped them to use each activity strength. A video clip of a lion, who remembered his city-based owners after a year in the wild, provided a change of pace and gave rise to an interesting discussion about the strengths of the lion as well as his former owners.

After a whole class discussion on the links between activity and character strengths, students were invited to pair up with “someone who knows you well” to complete the process of identifying their character strengths. Students sorted through their character
strengths card sets and were encouraged to make yes/no/maybe piles of strengths that were more or less like you. This process was made easier because they had already established that they used some of the character strengths in their preferred activities. When they had identified their strengths, (using categorisation prompts such as I do that/I don’t do that and that’s important to me/not important to me), students wrote them on a strengths wheel. The session closed with the usual review of the day including students sharing their favourite character strength and something they learned about a classmate during the session. Class and homework for the week was to think about challenges the class might face as individuals or as a group.

Session 4, Awesome Us Strengths Programme

This session marked a change in focus from identifying strengths to looking at how they can be used. It began with a review of strengths in the news, including a video clip of two dogs that survived the Japanese earthquake of February 2011, with one dog looking after and seeking help for the other injured dog. Clips of animals were popular with students and enabled open discussion about feelings of caring and love. The first activity of the day involved the entire class posting their top strengths on posters around the classroom to enable the class to see how strengths were distributed in the classroom. Students then discussed their recently identified strengths in pairs, noting which strengths they used or relied on most often, and which ones they might like to use more. They chose a strength to discuss in depth with their partner, and shared stories of times they had used that strength. This included discussion of which people in the student’s life noticed their use of this strength, or would know they had this strength, and the best possible use they could imagine making of this strength.

A video clip of a rock climber working for several weeks on a difficult climb and
dealing with set back and failure prompted discussion of strengths of persistence, patience, practice, hope, curiosity, and creativity. It also led into a solo activity where students identified a challenge they were facing. This was described as a problem they would like to solve or something they might like to do better, from improving sports skills to having their mother not be upset at them for not doing homework. Each student spread the strengths cards they wanted to use around the challenge and then paired up to discuss how they would use each of the strengths they had chosen to deal with the challenge. The class as a whole discussed whether or not strengths could help them deal with challenges, and what, if anything, changed when they thought about using strengths. The session ended with a review of the day’s learning. Suggested class work was to continue spotting strengths in each other and to create a graph in maths class of the distribution of strengths in the classroom. Students were also asked to think about a goal they would really like to achieve and bring those ideas to class next week.

Session 5, Awesome Us Strengths Programme

This session focused on the notion that everybody has strengths, but that having strengths is not an end in itself. Strengths were described as for using, and to help achieve the goals that people care about. After reviewing students’ strengths spotting in self or others during the previous week, images of potential heroes and admired figures (including an Olympic mountain biker, Nelson Mandela, Edmund Hillary, and the youngest round-the-world solo sailor) were displayed with discussion of their strengths. Students then discussed in pairs who they really admired, their strengths, and what that person had used their strengths to achieve. Before setting their own goals, the class watched a video clip of unusual or challenging goals (e.g., base jumping in the Alps, or a runner winning a race after a mid-race fall had left them in last place with less than a lap to go). The class then discussed why they set goals, the kinds of goals they have had success with, and the factors that have helped
them achieve their goals.

Students were introduced to self-concordant goal-setting, including how to select the right goal, and strategies to help stick to a goal. They listened to examples of goals other students had set and the surprising uses they had made of different strengths. For example, a girl who wanted to improve her downhill mountain biking said she would use strengths of courage (to ride the steep track), friendship (to share lifts to the track), and kindness (helping sponsors to tidy up after events so they would consider her for future sponsorship). Strengths were described as ways to turbocharge goal pursuit. Working in pairs, students then set a personal goal they would like to achieve in the next 4-8 weeks, identifying how they would use the strengths they selected to help them achieve their goal, and the resources (including people, places, and things) that would support them to keep pursuing their goal. They also listed the action steps necessary to achieve their goal. Once they had set goals, students shared them with the class. They were then introduced to goal visualisation and use of reminders to help stick to goals.

To provide a change of pace and activity, students finished the day by creating posters of a strengths superhero. They chose a strength they were very familiar with, identified its normal powers and how and when this strength can help people. They then created a super version endowing the selected strength with special powers. Students discussed in pairs when this superhero would be helpful and when it might make matters worse. They then named and designed their superheroes. The session ended with a review of the day. Goal reminder cards were distributed to complete during the week in class. Students were asked to collect photos or pictures of things they love doing, to be used in creating a personal strengths poster in the final session.
Session 6, Awesome Us Strengths Programme

The final session highlighted the importance and challenges of friendship. After a review of the previous week including checking on students’ goals progress and use of goal reminders, the class discussed the best and worst of friendship. Students watched a humorous video clip where a scientist tries to create an algorithm for making friends (from the TV series Big Bang Theory) and then shared their views on how friendships are built and maintained. Active constructive responding (Gable et al., 2004) or capitalising, was taught to the class where the process was described as making the good thing big. Students shared and responded to each other’s good news from the previous week.

Students then reflected on what friendship goal they would choose while doing a run and think. This involved a short run around a playground or school track while thinking about their goal. Run and think allowed time for individual reflection and physical activity and proved useful for many of the students prior to goal-setting. Working alone, students then set a goal to build or strengthen a friendship (family members could be included). They used a similar format as they had for personal goals, identifying ways they could use specific strengths to achieve their goal and the support (including family and friends) that they could draw on to help them. They also completed goal reminders and discussed optimal places to display them at home or at school.

The final activity students completed was to create a personal strengths poster or shield that showed favourite strengths and activities. Students were invited to include places where they use their strengths and things that remind them of their strengths. A range of art supplies including photos and craft materials were provided and many students brought their own photos. After completing their posters, students were invited to show their posters and tell the class, “What’s the most important thing your poster tells us about you?” Students
were reminded to keep using their strengths, especially when facing a challenge, and to keep looking for strengths in others. The session finished with a discussion on *some of the things that make this class awesome.*

Teachers and students were encouraged to maintain some strengths-related classroom activities during the month between the final session and the follow-up. These included noticing strengths in self and others at school and at home and discussing progress and obstacles to goal pursuit. These activities were intended to keep strengths on the class *agenda* and to continue development of a shared strengths vocabulary between students and teacher.

**Follow-up Session, Awesome Us Strengths Programme**

This session reviewed the programme content and was designed to support goal pursuit and continued use of strengths. It was delivered to each class one month after the final session. In pairs, students shared a peak moment, where they felt at their best, very good, or happy. They then discussed the strengths they had heard in each other’s stories and shared those with the class. The class then reviewed their goals, discussing progress and challenges. As a group they discussed responses of people outside the class to their goals, and things that were helping or hindering their progress. They discussed strategies to deal with challenges they faced such as other people not supporting them or forgetting about their goals. The class viewed a video clip of a sports team which had just won a major championship after seven years of working towards it. They discussed how the team used goal visualisation, self-belief, support for each other, and persistence despite setbacks, to achieve their goal. The final activity was a team strengths spotting quiz, naming the strengths demonstrated by famous people. The session ended with a video clip entitled *People are Awesome* featuring amazing skills and achievement of individuals of all ages.
Summary

The Awesome Us strengths programme was developed with the specific aim of testing the hypothesis that a strengths intervention could have interpersonal and group effects as well as enhancing individual well-being and engagement. The intervention design drew on research findings from previous strengths research, youth development, education, and other well-being research. The suitability of the programme produced for this study was tested in focus groups with students and teachers whose views and expertise informed the design and delivery of the programme. Further refinements were made to the programme following a pilot and feedback from a class of students and their teacher. Students in the pilot programme reported that it was interesting, engaging and worthwhile.
CHAPTER 6: Results of the Awesome Us Programme - Group Differences in Student Outcomes

Chapter Overview

Character strengths interventions have been shown to support well-being in some studies, and for some populations (see Chapter 3). However, the effects of strengths interventions have not yet been studied with primary school-age children, nor have their effects on important individual and group school variables such as classroom engagement and class climate been examined. A significant body of research 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 et al., 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). It was therefore of interest to determine if a strengths programme focusing on encouraging teacher and peer support (via strengths spotting) would lead to increased relatedness, which has previously been demonstrated to influence classroom engagement and climate (Furrer & Skinner, 2003; Skinner et al., 2008). The purpose of this study was to examine whether or not a brief, classroom-based strengths intervention could have beneficial group (class climate) as well as individual effects (engagement, intrinsic need satisfaction, well-being, and strengths use). This chapter investigates if these benefits occurred for programme participants when compared to a control group over the study period.

Data were entered using the SPSS statistical analysis software package, version 20 (IBM Corp., Released 2011). A one-way ANOVA of each outcome variable was conducted to determine if significant differences existed between the groups at pre-test, post-test, and follow-up. Further analysis was conducted to establish the influence of fixed factors such as
gender, age, and year group on outcomes. Where appropriate, ANCOVAs were used to assess differences between the groups at follow-up, controlling for pre-test scores of the variable and fixed factors demonstrated to have significant effects on results. Where ANCOVAs were not appropriate, mixed between-within subjects ANOVAs were used to examine differences by group at each time period\(^1\). An alpha level of .05 was used for all statistical tests of hypotheses unless otherwise stated.

Results are presented in six sections. Preliminary analysis of the data is set out in section one, followed by descriptive statistics of the study variables including demographics, correlations, mean scores, and standard deviations in section two. In section three the results of analyses of group differences between the study and control groups in well-being, classroom engagement, class climate, intrinsic need satisfaction, and strengths use are presented. Results of post-hoc exploratory analyses on a reduced data set, controlling for school differences, are presented in section four. In section five the results of analyses of programme acceptability and engagement with students and teachers are described. An overall discussion of the results is presented in section six.

**Preliminary Analyses**

Prior to running parametric analyses, missing values and outliers were examined, statistical power evaluated, and assumptions for analyses of variance were tested for each outcome variable. Three cases were deleted where participants had not completed the intervention programme or post-test surveys, resulting in a data set of \(N = 193\). This represents a completion rate of over 98% for students, who attended the strengths programme and completed post-test and follow-up surveys. More details on data cleaning, treatment of outliers, assessment of normality, and statistical power calculations are provided in Appendix

\(^1\) Analysis of these data using multi-level modelling (MLM) replicated the results presented here for group differences at follow-up. Post-test data were not analysed.
G. It is noted that the achieved sample size was smaller than that indicated by the power analysis. The study was therefore slightly underpowered to detect a moderate difference at 80% power and runs the risk of both Type I and Type II errors. These results should be interpreted with caution.

Tests of Assumptions for Parametric Analyses

Assumptions for ANCOVA analysis including reliable measurement of the covariate, normality, linearity, homogeneity of variances, and homogeneity of regression slopes were tested. These assumptions were met for all variables except positive affect and strengths use where regression slopes were not homogenous. Instead a mixed between-within subjects ANOVA was used for these variables that in each case also controlled for the covariates identified as having a significant effect on the variable. Box’s test of equality of covariance matrices, Mauchly’s test of sphericity, and Levene’s test of equality of error variances were examined for the mixed between-within subjects analyses. Based on these tests, any adjustments required to subsequent analyses are stated.

Descriptive Statistics

Group differences in personal characteristics were examined using analyses of variance for continuous variables (e.g., age) and Pearson $\chi^2$ 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.

**Differences in personal characteristics.** Analyses showed that participants in the intervention and control groups differed on age, $F(1, 76) = 4.75, p = .032$, with the
intervention group slightly younger ($M = 9.78$ yrs, $SD = 0.790$) than the control ($M = 10.15$, $SD = 1.13$). This age difference was also reflected in analyses of year group, with a greater proportion of the control group than the intervention group in Year 7-8, $\chi^2 (1, n = 193) = 9.70, p = .002$. The intervention and control groups did not differ on gender, $\chi^2 (1, n = 193) = 0.54, p = .462$. They did differ on their socio-economic status (as measured by school decile rating where 1 is lowest and 10 highest); 60% of the intervention group and 74.5% of the control in schools had a decile rating of 1-4; the remainder of students were in schools with a decile rating of 5-8. 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 6.1. 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. Mean scores for the modified class climate scale include negative mean scores because class friction scores were typically higher than those for class cohesion from which they were subtracted to calculate the modified class climate score.

Pearson product correlation coefficients (zero-order correlations) among the study variables at pre-test and follow-up are provided in Table 6.2. Bivariate correlations were in the expected directions with the strongest correlations between intrinsic need satisfaction and strengths use (.578 intervention, and .737 control); engagement and intrinsic need satisfaction (.468 and .727); and engagement and strengths use (.393 and .604). Notable changes in correlations at follow-up included a fall in the correlation between modified class climate and engagement in the control group (.189), while that of the intervention group remained significant (.355).
<table>
<thead>
<tr>
<th>Measure (range)</th>
<th>Pre-test</th>
<th>Post-Test</th>
<th>Follow-Up</th>
<th>Pre-test</th>
<th>Post-Test</th>
<th>Follow-Up</th>
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**Note.** n = participant numbers. T = Total. M = Male. F = Female. I-PANAS-SF = International PANAS Short Form. Intrinsic Motivation = % of participants whose goals were categorized as intrinsically motivated. Goal Completion = number and percentage of participants who completed one or both goals. Participant Programme Rating = satisfaction rating of strengths programme by student participants.
Table 6.1 (ctd.)

Descriptive Statistics for Study Variables

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<td></td>
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<td></td>
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</tr>
<tr>
<td>Goal Striving &amp; Attainment</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>(1 to 9)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Completed 2 Goals (%)</td>
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<td></td>
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<tr>
<td>Completed 1 or more (%)</td>
<td></td>
<td></td>
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<tr>
<td>Participant Programme</td>
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<tr>
<td>Rating (1 to 5)</td>
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<td></td>
</tr>
</tbody>
</table>

Note. n = participant numbers. T = Total. M = Male. F = Female. I-PANAS-SF = International PANAS Short Form. Intrinsic Motivation = % of participants whose goals were categorized as intrinsically motivated. Goal Completion = number and percentage of participants who completed one or both goals. Participant Programme Rating = satisfaction rating of strengths programme by student participants.
CHAPTER 6: Results – Group Differences in Student Outcomes

Table 6.2
Pearson Product Correlation Coefficients for Intervention and Control Groups at Pre-test and Follow-Up

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-test</th>
<th></th>
<th></th>
<th></th>
<th>Follow-Up</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Life Satisfaction</td>
<td>.116</td>
<td>-.252**</td>
<td>.284**</td>
<td>.094</td>
<td>.221**</td>
<td>.415**</td>
<td>-.199**</td>
<td>-.377**</td>
<td>.413**</td>
</tr>
<tr>
<td>Positive Affect</td>
<td>-.133</td>
<td>.193*</td>
<td>.024</td>
<td>.197*</td>
<td>.171*</td>
<td>-.061</td>
<td>.431**</td>
<td>.089</td>
<td>.315**</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>-.271**</td>
<td>-.196*</td>
<td>-.047</td>
<td>-.134</td>
<td>-.152</td>
<td>-.265**</td>
<td>-.220*</td>
<td>-.120</td>
<td>.007</td>
</tr>
<tr>
<td>Classroom engagement</td>
<td>-.404**</td>
<td>.468**</td>
<td>.393**</td>
<td>-.</td>
<td>-.355**</td>
<td>.633**</td>
<td>.527**</td>
<td>.077</td>
<td>.415*</td>
</tr>
<tr>
<td>Modified class climate</td>
<td>-.</td>
<td>.210*</td>
<td>.096</td>
<td>-.</td>
<td>-.361**</td>
<td>.235**</td>
<td>-.122</td>
<td>.045</td>
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</tr>
<tr>
<td>Intrinsic need satisfaction</td>
<td>-.</td>
<td>-.</td>
<td>.578**</td>
<td>-.</td>
<td>-.</td>
<td>.619**</td>
<td>.101</td>
<td>.390*</td>
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<tr>
<td>Strengths use</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>.073</td>
<td>.563**</td>
<td>-.</td>
</tr>
<tr>
<td>Goal self-concordance</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>.459*</td>
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</tr>
<tr>
<td>Goal striving &amp; attainment</td>
<td>-.</td>
<td>-.</td>
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<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td></td>
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<tr>
<td>Control</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Life Satisfaction</td>
<td>-.343*</td>
<td>-.338*</td>
<td>.508**</td>
<td>.303*</td>
<td>.529**</td>
<td>.478**</td>
<td>-.179</td>
<td>-.227</td>
<td>.313*</td>
</tr>
<tr>
<td>Positive Affect</td>
<td>-.054</td>
<td>.418**</td>
<td>.215</td>
<td>.441**</td>
<td>.493**</td>
<td>-.209</td>
<td>.558**</td>
<td>.023</td>
<td>.586**</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>-.235</td>
<td>.060</td>
<td>-.169</td>
<td>-.189</td>
<td>-.</td>
<td>.209</td>
<td>.558**</td>
<td>.023</td>
<td>.586**</td>
</tr>
<tr>
<td>Classroom engagement</td>
<td>-.320*</td>
<td>.727**</td>
<td>.604**</td>
<td>-.</td>
<td>-.189</td>
<td>.604**</td>
<td>.517**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modified class climate</td>
<td>-.299*</td>
<td>.132</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>.167</td>
<td>.033</td>
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</tr>
<tr>
<td>Intrinsic need satisfaction</td>
<td>-.</td>
<td>.737**</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>.679**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strengths use</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td>-.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Data excluded pairwise. Intervention: n = 117-137 at pre-test, 134-136 at follow-up. Control, n= 45-55 at pre-test, 53 at follow-up. * = significant at p = .05; ** = significant at p = .001. "Goal-related data was collected at post-test and follow-up only.
Group Differences in Well-Being, Classroom Engagement, Class Climate, Intrinsic Need Satisfaction, and Strengths Use

Group Differences in Student Well-being

Positive affect. A one-way analysis of variance was conducted to assess group differences in positive affect (PA) at each time period in the study. Results indicated group differences in PA at post-test, $F(1, 191) = 7.06, p = .009$, and follow-up, $F(1, 187) = 6.27, p = .013$, but none at pre-test. Results of a series of 2X2 ANOVAs with PA at follow-up as the dependent variable and group and each of gender, age, and year as fixed factors, provided in Table 6.3, indicated that further analysis of PA should control for year.

Table 6.3
Influences of Gender, Age, and Year on Positive Affect

<table>
<thead>
<tr>
<th>Factor</th>
<th>Main Effect</th>
<th>Interaction Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>$F(1, 185) = 0.99, p = .320$</td>
<td>$F(1, 185) = 1.03, p = .312$</td>
</tr>
<tr>
<td>Age</td>
<td>$F(4, 180) = 1.08, p = .367$</td>
<td>$F(3, 180) = 0.27, p = .850$</td>
</tr>
<tr>
<td>Year</td>
<td>$F(1, 185) = 5.13, p = .025^*$</td>
<td>$F(1, 185) = 1.29, p = .257$</td>
</tr>
</tbody>
</table>

Note. * = significant at $p < .05$.

A mixed between-within subjects ANOVA was conducted to assess the impact of group on PA scores across pre-test, post-test and follow-up time periods, controlling for the effect of year. The dependent variable consisted of mean scores on PA at pre-test, post-test, and follow-up, with group as the between-subjects factor, and year as covariate. Results indicated that PA changed over time differently for students in the intervention and control groups, $F(1.896, 350.722) = 7.20, p = .001$, partial $\eta^2 = 0.037$, using the Greenhouse-Geisser correction because assumptions of sphericity were violated (Greenhouse-Geisser estimate of sphericity, epsilon = .948). Specifically, PA was slightly lower in the intervention group ($M = 16.56, SD = 4.22$) than the control ($M = 17.38, SD = 3.73$) at pre-test, although not significantly different. At post-test, PA was significantly higher for students in the
intervention group ($M = 18.28, SD = 3.58$) than for the control group ($M = 16.70, SD = 4.15$) and this difference persisted at follow-up. Main effects for PA were not significant and there was no significant interaction effect between year and PA. Tests of between-subjects effects indicated that year was a significant predictor of PA, $F(1, 185) = 7.91, p = .005$, but that group was not, $F(1, 185) = 0.75, p = .388$.

Figure 6.1, which includes intervention and control group PA and standard error (SE) scores at pre-test, post-test, and follow-up, shows that PA in the control group dropped slightly from pre-test to post-test and continued to decline at follow-up. In contrast, the intervention group showed an increase in PA at post-test which was not fully sustained at follow-up although significant differences remained. To express the PA effect size (partial $\eta^2 = 0.037$) in terms of the change attributable to the intervention, the BESD was calculated (Rosnow, Rosenthal, & Rubin 1982). The intervention group showed a 20% greater enhancement rate than the control group.

![Figure 6.1](image)

*Figure 6.1.* Positive affect scores (±SE) for intervention and control groups at pre-test, post-test, and follow-up.

**Negative affect.** A one-way analysis of variance was conducted to examine group differences in negative affect (NA) at each time period in the study. There were no
significant differences between the intervention and control groups at pre-test, and contrary to expectation, no significant differences at post-test, $F(1, 191) = 2.66, p = 0.11$, or follow-up, $F(1, 187) = 1.50, p = .222$. Results of a series of 2X2 ANOVAs with NA at follow-up as the dependent variable and group and each of gender, age, and year as fixed factors, provided in Table 6.4, indicated that further analysis of NA should control for gender.

Table 6.4

*Influences of Gender, Age, and Year on Negative Affect*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Main Effect</th>
<th>Interaction Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>$F(1, 185) = 4.47, p = .036^*$</td>
<td>$F(1, 185) = 1.28, p = .259$</td>
</tr>
<tr>
<td>Age</td>
<td>$F(1, 185) = 1.09, p = .363$</td>
<td>$F(3, 180) = 1.28, p = .283$</td>
</tr>
<tr>
<td>Year</td>
<td>$F(1, 185) = 1.35, p = .247$</td>
<td>$F(1, 185) = 0.13, p = .722$</td>
</tr>
</tbody>
</table>

Note. * = significant at $p < .05$.

ANCOVAs were conducted where group (intervention or control), served as the independent variable, NA mean scores at post-test and follow-up as the dependent variables, and pre-test NA and gender as covariates. Once pre-test NA and gender were controlled for, group differences were just below the threshold indicating significance at post-test, $F(1, 188) = 3.91, p = .050$. This marginally significant result was not maintained at follow-up, $F(1, 184) = 1.41, p = .237$. The intervention group reported higher NA scores at post-test ($M =12.33, SD = 4.24$) than the control group ($M =11.29, SD = 3.35$), as illustrated in Figure 6.2, but this difference was not significant, and was further reduced at follow-up when intervention group scores ($M =11.81, SD = 3.55$) fell more than those of the control group ($M =11.11, SD = 3.40$).
CHAPTER 6: Results – Group Differences in Student Outcomes

Figure 6.2. Negative affect scores (±SE) for intervention and control groups at pre-test, post-test, and follow-up.

Life satisfaction. A one-way analysis of variance was conducted to examine group differences in life satisfaction at pre-test, post-test, and follow-up. Contrary to expectation, student life satisfaction was not significantly greater at post-test, $F(1, 191) = 2.63, p = .107$, or follow-up, $F(1, 187) = 0.25, p = .621$, amongst the intervention group than the control group. Differences at pre-test were also not significant. Results of a series of 2X2 ANOVAs with student life satisfaction at follow-up as the dependent variable and group and each of gender, age, and year as fixed factors, provided in Table 6.5, provided no evidence of these factors influencing life satisfaction outcomes.

Table 6.5
Influences of Gender, Age, and Year on Student Life Satisfaction

<table>
<thead>
<tr>
<th>Factor</th>
<th>Main Effect</th>
<th>Interaction Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>$F(1, 185) = 0.04, p = .516$</td>
<td>$F(1, 185) = .005, p = .469$</td>
</tr>
<tr>
<td>Age</td>
<td>$F(4, 180) = 1.12, p = .350$</td>
<td>$F(3, 180) = 0.06, p = .603$</td>
</tr>
<tr>
<td>Year</td>
<td>$F(1, 185) = 1.76, p = .186$</td>
<td>$F(1, 185) = 1.23, p = .269$</td>
</tr>
</tbody>
</table>

Note. * = significant at $p < .05$.

ANCOVAs were conducted to assess the effect of the programme on life satisfaction once pre-test scores were controlled for where group (intervention/control) served as the
independent variable, mean life satisfaction scores at post-test and follow-up served as
dependent variables, with mean pre-test life satisfaction scores as covariate. Results of these
ANCOVAs, illustrated in Figure 6.3, indicated no significant difference between the groups
at post-test, $F(1, 189) = 1.96, p = .163$ or follow-up, $F(1, 185) = 0.19, p = .668$.

Figure 6.3. Student life satisfaction scores for intervention and control groups (+SE) at pre-test, post-test, and follow-up.

**Group Differences in Classroom Engagement**

A one-way analysis of variance was conducted to assess group differences in
classroom engagement at each time period in the study. Results indicated group differences
in classroom engagement at post-test, $F(1,187) = 5.93, p = .016$, and follow-up, $F(1,185) =
6.70, p = .010$, but none at pre-test. Results of a series of 2X2 ANOVAs with engagement at
follow-up as the dependent variable, and group and each of gender, age, and year as fixed
factors, indicated that further analysis of engagement should control for gender, age, and year
as well as pre-test engagement, as described in Table 6.6. Given that these results showed
main effects for gender but no interaction effect with the strengths programme, it would
appear that girls and boys responded equally well to the programme.
Table 6.6

*Influences of Gender, Age, and Year on Classroom Engagement*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Main Effect</th>
<th>Interaction Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>$F(1, 183) = 10.55, p = .001^*$</td>
<td>$F(1, 183) = 2.08, p = .151$</td>
</tr>
<tr>
<td>Age</td>
<td>$F(4, 178) = 1.75, p = .140$</td>
<td>$F(3, 178) = 2.75, p = .044^*$</td>
</tr>
<tr>
<td>Year</td>
<td>$F(1, 183) = 6.08, p = .015^*$</td>
<td>$F(1, 155) = 4.02, p = .047^*$</td>
</tr>
</tbody>
</table>

*Note.* $^*$ = significant at $p < .05$.

ANCOVAs were conducted in which mean follow-up engagement scores served as the dependent variable, group served as the independent variable, and mean pre-test engagement scores, age, year, and gender served as covariates. Results, illustrated in Figure 6.4, demonstrated a significant difference between the intervention and control groups on classroom engagement while controlling for gender, age, and year, at follow-up, $F(1,154) = 4.782, p = .030$, and partial $\eta^2 = 0.03$, but not at post-test, $F(1,157) = 3.55, p = .062$.

![Figure 6.4](image)

*Figure 6.4.* Classroom engagement scores ($\pm$SE) for intervention and control groups at pre-test, post-test, and follow-up.

Engagement scores were not significantly different between intervention ($M = 13.79$, $SD = 9.62$) and control ($M = 11.63$, $SD = 11.12$) groups at pre-test, and although intervention group scores increased at post-test ($M = 14.08$, $SD = 10.22$), while those of the control group
fell at post-test ($M = 9.90$, $SD = 11.12$) differences were not significant. A further increase in intervention scores at follow-up ($M = 14.93$, $SD = 9.99$), meant that although control group scores recovered slightly at follow-up ($M = 10.62$, $SD = 10.94$), group differences were significant at this time. Pre-test classroom engagement was a strong predictor of engagement at post-test and follow-up ($p < .001$). Gender was a significant predictor of engagement at post-test ($p = .012$), but not at follow-up. None of the other factors controlled for were significant predictors at either time period. A BESD calculated for the classroom engagement effect size (partial $\eta^2 = 0.03$) indicated that the intervention group showed a 17% greater rate of enhancement than the control group. Results of the ANCOVA of classroom engagement at follow-up are shown in Table 6.7.

Table 6.7

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>7766.273$^a$</td>
<td>5</td>
<td>1553.255</td>
<td>27.110</td>
<td>.000</td>
<td>.468</td>
</tr>
<tr>
<td>Intercept</td>
<td>1.719</td>
<td>1</td>
<td>1.719</td>
<td>.030</td>
<td>.863</td>
<td>.000</td>
</tr>
<tr>
<td>Gender</td>
<td>81.664</td>
<td>1</td>
<td>81.664</td>
<td>1.425</td>
<td>.234</td>
<td>.009</td>
</tr>
<tr>
<td>Age</td>
<td>10.051</td>
<td>1</td>
<td>10.051</td>
<td>.175</td>
<td>.676</td>
<td>.001</td>
</tr>
<tr>
<td>Year</td>
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<td>1</td>
<td>43.057</td>
<td>.752</td>
<td>.387</td>
<td>.005</td>
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<tr>
<td>Pre-test CE</td>
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<td>5188.640</td>
<td>90.561</td>
<td>.000*</td>
<td>.370</td>
</tr>
<tr>
<td>Group</td>
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<td>1</td>
<td>273.958</td>
<td>4.782</td>
<td>.030*</td>
<td>.030</td>
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<tr>
<td>Error</td>
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<td>154</td>
<td>57.294</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
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<td>160</td>
<td></td>
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</tr>
<tr>
<td>Corrected Total</td>
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<td>159</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Pre-test CE = Pre-test classroom engagement. $^a$R Squared = .468 (Adjusted R Squared = .451). * = significant at $p < .05$.

**Group Differences in Modified Class Climate**

A one-way ANOVA to compare modified class climate in the intervention and control groups at each time period of the study showed no significant differences at pre-test, but significant differences were observed at post-test, $F(1, 186) = 4.47, p = .036$, and follow-up,
\[ F(1, 187) = 7.60, \ p = .006. \] Results of 2X2 ANOVAs with modified class climate at follow-up as the dependent variable and group and each of gender, age, and year as fixed factors, provided in Table 6.8, indicated that, gender, age, and year should be controlled for in further analyses.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Main Effect</th>
<th>Interaction Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>[ F(1, 185) = 4.23, \ p = .041^* ]</td>
<td>[ F(1, 185) = 0.02, \ p = .887 ]</td>
</tr>
<tr>
<td>Age</td>
<td>[ F(4, 180) = 4.05, \ p = .004^* ]</td>
<td>[ F(3, 180) = 1.15, \ p = .330 ]</td>
</tr>
<tr>
<td>Year</td>
<td>[ F(1, 185) = 17.25, \ p = .000^* ]</td>
<td>[ F(1, 185) = 2.70, \ p = .102^* ]</td>
</tr>
</tbody>
</table>

*Note. \(^*\) = significant at \( p < .05 \).  

ANCOVAs were conducted to assess the effect of the strengths programme on modified class climate where group served as the independent variable, modified class climate at post-test and follow-up as the dependent variables, with modified class climate at pre-test, gender, age, and year as covariates. Results, illustrated in Figure 6.5, showed a significant difference in modified class climate between intervention and control groups controlling for pre-test modified class climate, gender, age, and year, at follow-up, \( F(1, 175) = 4.15, \ p = .043 \), partial \( \eta^2 = 0.023 \), but not at post-test, \( F(1, 174) = 3.26, \ p = .073 \). A BESD calculated to indicate the change in modified class climate (effect size, partial \( \eta^2 = 0.03 \)) attributable to the intervention, indicated that the intervention group showed a 17% greater rate of enhancement than the control group.
Figure 6.5. Modified class climate scores (+SE) for intervention and control groups at pre-test, post-test, and follow-up.

Although modified class climate scores in the intervention group showed a smaller decrease from pre-test ($M = -.372, SD = 0.852$) to post-test ($M = -.446, SD = 1.03$) than in the control group, where scores fell sharply from pre-test ($M = -.476, SD = 0.925$) to post-test ($M = -.781, SD = 0.850$), nonetheless, post-test differences were not significant. However, when intervention group scores at follow-up increased to above pre-test levels ($M = -.343, SD = 0.931$), in contrast to a slight increase in control group scores ($M = -.756, SD = 0.912$), differences between the two groups became statistically significant. Significant predictors of modified class climate at follow-up included pre-test modified class climate ($p < .001$), year ($p = .016$), and gender ($p = .027$). Results of the ANCOVA of modified class climate at follow-up are shown in Table 6.9.
Table 6.9

**ANOVA of Modified Class Climate at Follow-up, Controlling for Pre-test Modified Class Climate, Gender, Age, and Year**

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>57.692$^a$</td>
<td>5</td>
<td>11.538</td>
<td>19.288</td>
<td>.000</td>
<td>.355</td>
</tr>
<tr>
<td>Intercept</td>
<td>.456</td>
<td>1</td>
<td>.456</td>
<td>.762</td>
<td>.384</td>
<td>.004</td>
</tr>
<tr>
<td>Gender</td>
<td>2.995</td>
<td>1</td>
<td>2.995</td>
<td>5.006</td>
<td>.027*</td>
<td>.028</td>
</tr>
<tr>
<td>Age</td>
<td>.365</td>
<td>1</td>
<td>.365</td>
<td>.610</td>
<td>.436</td>
<td>.003</td>
</tr>
<tr>
<td>Year</td>
<td>3.521</td>
<td>1</td>
<td>3.521</td>
<td>5.886</td>
<td>.016*</td>
<td>.033</td>
</tr>
<tr>
<td>Pre-test MCC</td>
<td>34.813</td>
<td>1</td>
<td>34.813</td>
<td>58.195</td>
<td>.000*</td>
<td>.250</td>
</tr>
<tr>
<td>Group</td>
<td>2.484</td>
<td>1</td>
<td>2.484</td>
<td>4.152</td>
<td>.043*</td>
<td>.023</td>
</tr>
<tr>
<td>Error</td>
<td>104.687</td>
<td>175</td>
<td>.598</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>201.208</td>
<td>181</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>162.379</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Pre-test MCC = Pre-test Modified Class Climate. $^a$ R Squared = .355 (Adjusted R Squared = .337). Significant at $p < .05.$

**Group Differences between Intervention and Control Groups on Intrinsic Need Satisfaction**

A one-way ANOVA was conducted to assess group differences in intrinsic need satisfaction at each time period in the study. Results indicated group differences in intrinsic need satisfaction at post-test $F (1, 190) = 8.27, p = .004$, and follow-up, $F (1, 187) = 5.70, p = .018$, but none at pre-test. The CINSS contains three sub-scales of relatedness, competence, and autonomy. Further analysis revealed that differences were concentrated in some of these dimensions and so analysis is presented for each of these.

**Group differences in relatedness.** A one-way ANOVA comparing intervention and control group relatedness means at each time period of the study, showed significant differences at post-test, $F (1, 190) = 10.48, p = .001$, and follow-up, $F (1, 187) = 10.87, p = .001$, but no significant differences at pre-test. Results of 2X2 ANOVAs with relatedness at follow-up as the dependent variable and group and each of gender, age, and year as fixed
factors, provided in Table 6.10, indicated that, gender, age, and year should be controlled for in further analyses.

Table 6.10

<table>
<thead>
<tr>
<th>Factor</th>
<th>Main Effect</th>
<th>Interaction Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>$F(1, 185) = 10.87, p = .001^*$</td>
<td>$F(1, 185) = 0.00, p = .977$</td>
</tr>
<tr>
<td>Age</td>
<td>$F(4, 180) = 2.16, p = .075$</td>
<td>$F(3, 180) = 4.11, p = .007^*$</td>
</tr>
<tr>
<td>Year</td>
<td>$F(1, 185) = 6.21, p = .014^*$</td>
<td>$F(1, 185) = 7.17, p = .008^*$</td>
</tr>
</tbody>
</table>

*Note.* * = significant at $p < .05$.

ANCOVAs were conducted to assess programme effects on relatedness where group served as the independent variable, scores on relatedness at post-test and follow-up served as the dependent variables, with relatedness at pre-test, gender, age, and year as covariates. Results, illustrated in Figure 6.6, showed significant difference in relatedness scores between intervention and control groups, controlling for pre-test relatedness, gender, age, and year, at post-test, $F(1, 185) = 7.17, p = .008$, partial $\eta^2 = 0.037$, and follow-up, $F(1, 182) = 6.81, p = .010$, partial $\eta^2 = 0.036$. A BESD calculated for the relatedness effect size (partial $\eta^2 = 0.04$) indicated that the intervention group showed a 20% greater rate of relatedness enhancement than the control group at post-test and follow-up.
CHAPTER 6: Results – Group Differences in Student Outcomes

Figure 6.6. Relatedness scores (±SE) for intervention and control groups at pre-test, post-test, and follow-up.

Relatedness was slightly higher in the intervention group \((M = 16.07, SD = 1.79)\) than the control \((M = 15.58, SD = 2.13)\) at pre-test, although not significantly different. Intervention group scores remained virtually unchanged at post-test \((M = 16.02, SD = 2.01)\), in contrast to the control group where scores fell at post-test \((M = 14.93, SD = 2.38)\), resulting in significant differences which were sustained at follow-up. Pre-test relatedness was a significant predictor of relatedness at post-test \((p < .001)\), and follow-up \((p < .001)\), and gender at follow-up \((p = .022)\). Results of the ANCOVA of relatedness at follow-up, presented in Table 6.11, were selected to illustrate relatedness changes because, although slightly smaller in effect size than those at post-test, they represent differences that were sustained over a longer period.
Group differences in competence. A one-way analysis of variance was conducted to assess group differences in competence need satisfaction at each time period in the study. Results indicated there were no significant differences at pre-test, or follow-up, but significant differences at post-test, $F(1, 190) = 6.21, p = .014$. Results of 2X2 ANOVAs with competence at follow-up as the dependent variable and group and each of gender, age, and year as fixed factors, provided in Table 6.12, indicated that gender should be controlled for in further analyses.

Table 6.12
Influences of Gender, Age, and Year on Competence

<table>
<thead>
<tr>
<th>Factor</th>
<th>Main Effect</th>
<th>Interaction Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>$F(1, 185) = 6.12, p = .014^*$</td>
<td>$F(1, 185) = 0.05, p = .824$</td>
</tr>
<tr>
<td>Age</td>
<td>$F(4, 180) = 1.00, p = .408$</td>
<td>$F(3, 180) = 1.43, p = .235$</td>
</tr>
<tr>
<td>Year</td>
<td>$F(1, 185) = 0.75, p = .387$</td>
<td>$F(1, 185) = 2.23, p = .137$</td>
</tr>
</tbody>
</table>

*Note. * = significant at $p < .05.*
Results of ANCOVAs that controlled for the effects of gender and pre-test competence, illustrated in Figure 6.7, confirmed there were significant differences in competence scores between the intervention and control groups at post-test, $F(1, 187) = 5.51, p = .020$, partial $\eta^2 = 0.029$, but no significant differences at follow-up, $F(1, 184) = 2.04, p = .155$.

Figure 6.7. Competence scores (+SE) for intervention and control groups at pre-test, post-test, and follow-up.

Competence was slightly higher in the intervention group ($M=15.58$, $SD = 2.21$) than the control ($M=15.29$, $SD = 2.19$) at pre-test, although not significantly different. Intervention group scores increased slightly at post-test ($M=15.85$, $SD = 2.37$), in contrast to the control group where scores fell at post-test ($M=14.89$, $SD = 2.54$), resulting in significant differences between the two groups. Differences were not significant at follow-up as control group scores returned to pre-test levels ($M=15.36$, $SD = 2.37$), while intervention group scores increased only marginally ($M=15.99$, $SD = 2.23$). Pre-test competence was a significant predictor of competence at post-test ($p < .001$), and follow-up ($p < .001$), but not
gender did not predict competence. Results of the ANCOVA of group differences in post-test competence need satisfaction are set out in Table 6.13.

Table 6.13

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>387.331</td>
<td>3</td>
<td>129.110</td>
<td>31.707</td>
<td>.000</td>
<td>.337</td>
</tr>
<tr>
<td>Intercept</td>
<td>127.405</td>
<td>1</td>
<td>127.405</td>
<td>31.288</td>
<td>.000</td>
<td>.143</td>
</tr>
<tr>
<td>Pre-test Com</td>
<td>324.995</td>
<td>1</td>
<td>324.995</td>
<td>79.812</td>
<td>.000*</td>
<td>.299</td>
</tr>
<tr>
<td>Gender</td>
<td>2.908</td>
<td>1</td>
<td>2.908</td>
<td>.714</td>
<td>.399</td>
<td>.004</td>
</tr>
<tr>
<td>Group</td>
<td>22.420</td>
<td>1</td>
<td>22.420</td>
<td>5.506</td>
<td>.020*</td>
<td>.029</td>
</tr>
<tr>
<td>Error</td>
<td>761.465</td>
<td>187</td>
<td>4.072</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47456.000</td>
<td>191</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>1148.796</td>
<td>190</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


**Group differences in autonomy.** Using a one-way analysis of variance to assess group differences in autonomy at each time period in the study, there were no significant differences at pre-test, post-test, or follow-up. Results of 2X2 ANOVAs with autonomy at follow-up as the dependent variable and group and each of gender, age, and year as fixed factors, provided in Table 6.14, indicated that year should be controlled for in further analyses.

Table 6.14

<table>
<thead>
<tr>
<th>Factor</th>
<th>Main Effect</th>
<th>Interaction Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>$F (1, 185) = 0.82, \ p = .367$</td>
<td>$F (1, 185) = 2.47, \ p = .118$</td>
</tr>
<tr>
<td>Age</td>
<td>$F (4, 180) = 1.72, \ p = .148$</td>
<td>$F (3, 180) = 0.63, \ p = .595$</td>
</tr>
<tr>
<td>Year</td>
<td>$F (1, 185) = 4.21, \ p = .042^*$</td>
<td>$F (1, 185) = 0.81, \ p = .370$</td>
</tr>
</tbody>
</table>

Note. * = significant at $p < .05$.

ANCOVAs that controlled for the effect of year and pre-test autonomy, illustrated in Figure 6.8, found no significant group differences in autonomy scores between intervention
and control groups at post-test, \( F (1, 187) = 3.304, p = .071 \), or follow-up, \( F (1, 184) = 2.909, p = .090 \). Autonomy scores followed a trend similar to that reported for competence, where intervention group scores increased slightly at post-test and follow-up, in contrast to the control group, where scores fell at post-test, and subsequently recovered to pre-test levels at follow-up.

![Graph showing autonomy scores](image)

**Figure 6.8.** Autonomy scores (+SE) for intervention and control groups at pre-test, post-test, and follow-up.

**Group Differences in Strengths Use**

A one-way analysis of variance was conducted to assess group differences in strengths use at each time period in the study. Results indicated statistically significant group differences in strengths use at post-test, \( F (1, 177) = 12.68, p = .000 \), and follow-up, \( F (1, 185) = 6.39, p = .012 \), but not at pre-test. A series of 2X2 ANOVAs with strengths use at follow-up as the dependent variable and group and each of gender, age, and year as fixed factors, provided in Table 6.15, indicated that there was an interaction between gender and group that approached significance (\( p < .01 \) for this test because assumptions for Levene’s
Test for Equality of Variances were violated). It was decided to adopt a conservative approach and to control for gender in future analysis of strengths use.

Table 6.15

<table>
<thead>
<tr>
<th>Factor</th>
<th>Main Effect</th>
<th>Interaction Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>$F(1, 183) = 1.71, p = .193$</td>
<td>$F(1, 183) = 6.32, p = .013^{*a}$</td>
</tr>
<tr>
<td>Age</td>
<td>$F(4, 178) = 1.37, p = .245$</td>
<td>$F(3, 178) = 0.60, p = .613$</td>
</tr>
<tr>
<td>Year</td>
<td>$F(1, 183) = 1.58, p = .210$</td>
<td>$F(1, 183) = 0.68, p = .410$</td>
</tr>
</tbody>
</table>

*Note. * = significant at $p = .05$. *a* $p < .01$.

Analysis of covariance to compare the effects of the strengths programme on pre-existing levels of strengths use was not appropriate as regression slopes were not homogeneous. Instead, a mixed between-within subjects ANOVA was conducted to assess the impact of group on strengths use scores across the three time periods of the study, with mean scores on strengths use at each time period serving as dependent variable, group as the between-subjects factor, and gender as covariate. Tests of within-subjects effects demonstrated that there was a significant interaction effect between group and time to predict strengths use, $F(1.818, 285.442) = 3.40, p = .039$, partial $\eta^2 = 0.021$, using the Greenhouse-Geisser correction because assumptions of sphericity were violated (Greenhouse-Geisser estimate of sphericity, epsilon = .909). This interaction effect indicated that strengths use changed differently over time for students in the intervention and control groups, as illustrated in Figure 6.9.
Figure 6.9. Strengths use scores (±SE) for intervention and control groups at pre-test, post-test, and follow-up.

Specifically, strengths use was not significantly different in the intervention \((M = 76.05, SD = 17.36)\) and control \((M = 74.44, SD = 18.38)\) groups at pre-test, however, at post-test strengths use was statistically significantly higher for students in the intervention group \((M = 78.44, SD = 16.89)\) than the control group \((M = 67.46, SD = 21.64)\) where strengths use actually decreased. At follow-up this difference had reduced slightly, but strengths use was still significantly higher for students in the intervention group than those in the control group \((M = 76.96, SD = 18.71, \text{ and } M = 69.06, SD = 20.60, \text{ respectively})\).

Main effects for strengths use were not significant and there was no significant interaction effect between gender and strengths use. A test of between-subjects effects indicated that group was not a significant predictor of strengths use, \(F(1, 157) = 5.76, p = .018\), (the significance level was set at \(p < .01\) for this test because assumptions for Levene’s Test for Equality of Variances were violated at post-test). Gender was not a significant predictor of strengths use, \(F(1, 157) = 2.56, p = .112\). A BESD calculated for the strengths use effect size \((\text{partial } \eta^2 = 0.02)\) indicated that the intervention group showed a 14% greater rate of enhancement in strengths use than the control group.
Post-hoc Exploratory Analyses

Six schools participated in the study but only three had classes in both intervention and control conditions. This meant that it was not possible to control for school as a covariate in ANOVA and ANCOVA analysis. An exploratory analysis using a mixed between-within subjects ANOVA for positive affect and strengths use, and ANCOVA for engagement, class climate, overall intrinsic need satisfaction, and relatedness was conducted. Group differences were analysed, controlling for school, on a reduced data set (data were included only for schools represented in both intervention and control). Analyses also controlled for pre-test levels of the variable, gender, age, and year, where these had been controlled for in previous analyses of group differences. Results, set out in Table 6.16, were the same as those presented for the full data set; that is, significant differences were found between intervention and control groups at follow-up on positive affect, engagement, modified class climate, relatedness and overall intrinsic need satisfaction. In addition to group, school was a significant predictor of modified class climate and strengths use but not of any other outcomes. Analyses of difference on the same set of variables between schools in the reduced data set (Schools 1, 3, and 6), and those excluded from it (Schools 2, 4, and 5), indicated that no significant differences existed between them on any variable at follow-up.
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Table 6.1

<table>
<thead>
<tr>
<th>Student Variable</th>
<th>Group differences</th>
<th>School as a predictor of student variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Affect</td>
<td>$F(1.897, 348.980) = 7.55, p = .001^{a,b}$</td>
<td>$F(1.897, 348.980) = 0.52, p = .585^{b}$</td>
</tr>
<tr>
<td>Classroom Engagement</td>
<td>$F(1, 98) = 5.50, p = .021^{*}$</td>
<td>$F(1, 98) = 0.05, p = .825$</td>
</tr>
<tr>
<td>Modified Class Climate</td>
<td>$F(1, 112) = 6.47, p = .012^{*}$</td>
<td>$F(1, 112) = 7.90, p = .006^{*}$</td>
</tr>
<tr>
<td>Relatedness</td>
<td>$F(1, 116) = 6.72, p = .011^{*}$</td>
<td>$F(1, 116) = 0.21, p = .647$</td>
</tr>
<tr>
<td>Intrinsic Need Satisfaction</td>
<td>$F(1, 116) = 5.12, p = .025^{*}$</td>
<td>$F(1, 116) = 0.02, p = .880$</td>
</tr>
<tr>
<td>Strengths Use</td>
<td>$F(1, 98) = 5.75, p = .018^{*}$</td>
<td>$F(1, 98) = 0.38, p = .537$</td>
</tr>
<tr>
<td>Strengths Use</td>
<td>$F(1.799, 176.274) = 2.75, p = .073^{b}$</td>
<td>$F(1.799, 176.274) = 4.18, p = .020^{*b}$</td>
</tr>
</tbody>
</table>

Note. * = Significant result, $p < .05$.

*a Analyses also controlled for gender, age, and year, where these factors were controlled for in previous analyses of the student variable. bWithin-subjects effects; interaction effect of time and group or school as a predictor of the student variable.

Programme Acceptability and Engagement

For a strengths programme to be effective, the target audience must first find it relevant and interesting so that they actively participate. Analysis of student and teacher ratings of the Awesome Us programme, and student reports of their participation in the goal-setting aspect of the programme was conducted following the intervention. These analyses indicated that Awesome Us was relevant and interesting to students and teachers and that they engaged in and completed the activities in the programme.

Students enjoyed the programme with over 80% of students reporting that it was fun and interesting often or all of the time. Eighty per cent of students found the programme useful in their lives and 68% indicated that they practised what they had learned in the
programme outside of class, *often or all of the time*. The percentage of students using material outside the class was particularly encouraging.

As part of Awesome Us participants were asked to choose goals that mattered to them and to use their strengths to pursue them. Over 90% of participants categorised their personal and friendship goals as intrinsically motivated (i.e., it was fun and enjoyable, or an important goal to have), with a mean goal self-concordance score at post-test of 3.35 (0.676), (range 1-4). Participants reported mean overall goal striving and progress of 6.53 (1.92) at post-test, and 5.70 (2.59) at follow-up (range 1-9). Goal striving and progress naturally fell as goal completion increased. The reported goal completion rate at post-test was 43.9% and this increased to 75.5% at follow-up. The high levels of self-concordant goal-setting, goal striving, and goal completion rates suggest that most students actively participated in the programme, set goals that mattered to them, and worked to complete them. Furthermore completion rates were slightly higher for friendship goals than personal goals (41% for personal goals, and 47% for friendship goals at post-test, and 74% and 81% respectively at follow-up), suggesting that the relational aspect of Awesome Us was as engaging for students as the personal use of strengths.

All of the teachers who took part in Awesome Us reported afterwards that it was interesting to them, and over 80% of teachers said that it gave them information they could use in their own lives, often or almost every day. Sixty seven percent of teachers said they did the additional classroom activities suggested during Awesome Us often or almost every day. Over 83% of teachers indicated that they planned to make frequent use of the strengths information from Awesome Us in their classes in the future. The Strengths Programme Attitude score, averaged over these four items, for all teachers was 4.25 (0.570) (range 1-5). When followed up after a ten-week term, 67% of teachers reported that they had continued to use information from Awesome Us in their classes often or sometimes, and all the teachers
planned to continue using strengths information in their classes, with 50% planning to do so often or all of the time. These responses from teachers indicated that the programme was perceived as relevant for the classroom and useful for teachers.

**Discussion**

The results of this study supported the hypothesis that a brief, classroom-based strengths intervention would produce beneficial individual and group effects, namely in well-being, engagement, strengths use, and modified class climate at follow-up, although well-being effects occurred only in positive affect. The hypothesis that a strengths intervention focused on noticing strengths in self and others, would lead to increased relatedness was also supported, with changes in relatedness observed at post-test and follow-up.

**Well-Being**

Well-being differences in this study occurred solely in the measure of positive affect, while both negative affect and life satisfaction remained unchanged. The intervention group increased in positive affect, reversing the downward trend observed in the control group. These results demonstrate that the strengths programme had a beneficial effect on participants’ overall affective well-being. However, intervention group positive affect fell slightly from post-test to follow-up, raising questions about the possible duration of effects. Further research is required to determine how long effects last, and if on-going classroom support or activity can help maintain the initial increases.

The results from this study, the first evaluation of a strengths programme in a New Zealand school population, are comparable to those reported in a UK study of a slightly older student sample (aged 12-15 years; Proctor, Tsukayama, et al., 2011), however, negative affect scores were higher in this group, and were closer to PANAS results for slightly older adolescents (aged 14-19 years) in a US study (Huebner & Dew, 1996). Comparing life
satisfaction results with other youth research indicates that students in this study were as satisfied with life as their UK counterparts (Proctor, Linley, & Maltby, 2010; Proctor, Tsukayama, et al., 2011), and this did not change during the study.

In this study, affective well-being changes were not accompanied by any increase in life satisfaction over the 5-month study period. In direct contrast, a UK study of a youth strengths intervention found effects on life satisfaction but no significant change in affect (Proctor, Tsukayama, et al., 2011). Other research on a positive psychology curriculum for high school students which included strengths identification and development, found no changes in well-being although significant increases in social skills and reductions in problem behaviour were observed (Gillham, 2011). These studies suggest that youth strengths interventions can and do have significant positive effects, but further research is needed to understand why different aspects of well-being can be affected.

Well-being can be enhanced by either reducing negative emotion or increasing positive emotion (Fredrickson & Losada, 2005) or by increasing one’s cognitive evaluation of life satisfaction (Diener, 1994). In this study, it appears to have occurred through an increase in positive emotion with no significant change occurring in negative affect. This pattern of change is consistent with a UK study finding that while strengths use led to reduced stress and increased positive affect over time, it did not lead to changes in negative affect (Wood et al., 2011).

Although life satisfaction is generally understood to be a stable measure (Proctor et al., 2009b) that is slower to change than affective measures of well-being, debate continues about whether life satisfaction, and positive and negative affect share a single latent factor or are in fact separate constructs (Busseri, Sadava, & DeCourville, 2007). However, recent 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 positive feelings (Diener, Ng, Harter, & Arora, 2010). The Awesome Us strengths programme did not alter the material conditions of the students’ lives, but may have enhanced their sense of psychosocial prosperity through increased relatedness. Diener et al.’s (2010) finding may explain why this strengths programme influenced only positive feeling and not life satisfaction. However, it also underscores the fact that existing knowledge on how an intervention may influence youth well-being remains incomplete and serves as a reminder that youth life satisfaction and affective measures of well-being are not interchangeable. This suggests that future studies of youth well-being should include both affective and cognitive measures of well-being, and perhaps, even extend to broader measures that include social, emotional and psychological well-being.

**Engagement**

Students who participated in Awesome Us had significantly higher engagement levels at follow-up than those who received teaching as usual. Engagement fell over the study duration for students who did not receive the programme while it rose for those who did. A pattern of falling levels of engagement through the school year is typical for classroom engagement (Furrer & Skinner, 2003; Skinner et al., 2009); that the intervention group reversed this trend with engagement scores increasing at both time periods is notable and demonstrates that a classroom-based strengths programme can increase engagement for participating students relative to those who received normal tuition. The fact that group differences in engagement were not significant at post-test suggest that the effects of the programme on classroom engagement were not immediate, and may have occurred over time as programme techniques were used in the classroom.
Engagement results were comparable with those of students in international studies; participants’ behavioural and emotional engagement levels were similar to those in a US study of 1,018 children from 3rd to 6th grade (Skinner et al., 2008). It is noteworthy that girls and boys responded equally well to the Awesome Us programme. However, engagement remained relatively lower in males than female students and in Year 7/8 than Year 5/6 students. Further research that directly targets these differences would be required to determine if a strengths programme could, for example, effectively support engagement in intermediate school-age boys.

The strengths programme emphasised students setting meaningful personal and friendship goals. These represent *engaging activities* which students were asked to undertake. The strengths programme also provided opportunities for teachers to connect with students, for student sharing and discussion with peers, and it facilitated the use of a strengths language in the classroom. Thus, the programme may have influenced engagement by using strengths to support relationships or pursue goals, by introducing a strengths language in curriculum discussion or encouraging use of strengths language between students. Further research is required to ascertain which programme elements may have contributed to the increase in engagement, or if the change was due to other factors.

**Class Climate**

Central to this study was the hypothesis that a strengths programme that encouraged noticing strengths in self and others would have group as well as individual effects, that is, it would alter the classroom environment or class climate. Results demonstrated that students who participated in Awesome Us reported experiencing their classroom as more supportive than those who received classroom teaching as usual. Students’ scores for class cohesion and friction were slightly lower on both measures than those from a large study of Australian
students (n = 2305; Fisher & Fraser, 1981). As was the case for classroom engagement, group differences in modified class climate were not significant at post-test, but were at follow-up. This suggests that the effects of a strengths programme on class climate may occur over time.

Group, pre-test modified class climate, gender, and year group were significant predictors of modified class climate in this study. Analysis of a reduced data set which enabled analysis controlling for school also indicated that school was a significant predictor. The range of factors affecting class climate are not surprising when one considers that it is the product of the classroom relationships, interactions with the teacher, and influences from school culture. However, given the range of influences on class climate, it is notable that participating students reported a significant improvement in modified class climate.

Both intervention and control group students reported lower modified class climate scores at post-test than at pre-test, which was at the beginning of the school year. One possible explanation is that post-test scores reflect a more challenging period during the first term of the academic year, when students get to know each other and adjust to class norms. Although modified class climate in the intervention group recovered to above pre-pre-test levels, the control group levels continued to fall at follow-up. Intervention group increases in modified class climate may be explained by the fact that classes in this group were actively learning about each other’s strengths and sharing information about themselves which may have created a more cohesive environment. As part of identifying strengths in themselves and each other, students are reminded that people are different and they all have strengths. This may have led to increasing acceptance of difference within the classroom and thereby reduced friction.
Intrinsic Need Satisfaction

Students who participated in Awesome Us reported significantly higher levels of intrinsic need satisfaction at post-test and follow-up than the control group. These differences were concentrated in the relatedness need satisfaction sub-scale at both time periods, and in competence need satisfaction at post-test only, while autonomy need satisfaction remained unchanged. The group difference in relatedness was due to a sharp fall in relatedness in the control group, in contrast to stable relatedness levels among the programme participants.

Intrinsic need satisfaction has not previously been assessed in a strengths intervention with students so comparison with other strengths interventions is not possible. However, scores for students in this study suggest that their intrinsic need satisfaction equalled that of their Canadian peers in a well-being study. Scores were closer to those of the younger students in a Canadian study on the influence of intrinsic need satisfaction on children’s well-being, which assessed students aged 8-9 years and 12-13 years, (Veronneau, Koestner, & Abela, 2005), where younger students reported higher levels of competence, autonomy and relatedness than their older peers.

Relatedness benefits appear to have occurred equally amongst boys and girls. However, because girls started out with higher levels of relatedness than boys, gender differences were maintained at follow-up. This demonstrates that the Awesome Us strengths programme, which had a strong relationship focus, enhanced relatedness for both sexes, although it did not eliminate the gender difference in relatedness that existed in classes.

Students who participated in Awesome Us worked closely in small groups to discover and discuss each other’s strengths. They also watched video clips and, as a group, discussed the strengths they had observed. It is likely that this provided numerous opportunities for
students and teacher to share information that was important to them and enhance their understanding of each other. The programme is likely to have enhanced relatedness for these students and changes in relatedness appear to have occurred sooner than those for engagement or class climate. Relatedness is an important predictor of classroom engagement and subsequently, academic performance, and this result is therefore of particular relevance in a school setting (Furrer & Skinner, 2003). Increased relatedness, as it assesses the individual’s sense of connection to others, can also be considered as further evidence of group-level changes in connectedness.

It is of interest that while relatedness benefits were evident immediately post-test and sustained at follow-up, competence benefits were not. Many of the students who participated in Awesome Us commented that they hadn't known they had strengths before doing the programme. It is possible that this newfound knowledge may have enhanced a sense of competence in the short term. After the strengths programme, if students did not continue to actively use or develop strengths, then noticing strengths in others might have continued to enhanced relatedness, but may not have been sufficient to enhance students’ sense of competence. However, given that many students were actively engaged in pursuing personal and friendship goals which used their strengths, and reported an increase in strengths use, an increase in competence might have been expected. Although strengths use and development have been hypothesised to produce mastery experiences that are anticipated to result in increased competence need satisfaction, this effect has not yet been demonstrated as part of a strengths intervention. Further research is required to determine which intrinsic needs are satisfied by the different types of strengths intervention.

The Awesome Us programme was delivered within the classroom setting, and teachers were not asked to modify the overall structure of their teaching, nor their level of autonomy support. It is of interest that group differences occurred in well-being,
engagement, and modified class climate, but not in the level of autonomy need satisfaction. Future research could examine if the addition of autonomy supportive teaching could enhance the effectiveness of a strengths intervention in the classroom.

**Strengths Use**

Strengths use reported by Awesome Us participants was significantly higher at follow-up than in the control group, providing evidence that benefits following a strengths intervention were accompanied by an increase in strengths use. This is 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., 2010). Student participants in both study groups reported similar levels of pre-test strengths use to their teachers (mid-70s), which was at the high end of the Strengths Use Scale (range 14-98), however comparable figures for other groups are not available, so it is not possible to know if this is a normal or typical level. The high scores may in part be explained by the fact that students and teachers at the participating schools had all been exposed to the concept of strengths. All schools were part of a cluster group working on school well-being and teachers in those schools were familiar with the strengths classification of the VIA.

Although both groups reported similar levels of strengths use at pre-test, their trajectories diverged after the strengths programme. The intervention group maintained and slightly increased its strengths use, while the control group’s strengths use dropped significantly in comparison, and although it recovered slightly, did not return to pre-test levels. One explanation for this is that, without reminders, strengths use is a phenomenon that gets little attention or awareness from children in this age group, and that it was frequent reminders of strengths that maintained the intervention group’s higher awareness and reports
of strengths use. This explanation does not however, explain why the control group students should experience such a fall in strengths use over a 6-week period, or why it subsequently should improve at follow-up. The fact that this fall was associated with a fall in positive affect and satisfaction of the need for competence, autonomy and relatedness, suggests that it is not merely an artefact or a failure of the measure to reflect strengths awareness or use. The pre-test measures were taken soon after students returned to school from their summer holidays. It may be the case that these students do not associate their strengths use with school, or do not believe it is a place they can easily use their strengths. From this perspective, the fall could reflect an initial reduction in strengths use (and positive affect) due to being back at school. Students in the intervention group examined their strengths use and made plans to use their strengths to pursue goals, many of which involved using strengths at school or related to school. The strengths programme therefore could have made it easier for these students to see how they could use their strengths at school. Further research on strengths use in children could examine the extent to which they believe they can and do use their strengths in different domains, and if students’ strengths use and intrinsic need satisfaction is higher during their long holidays from school than it is when they are at school.

**Study Limitations**

This section describes specific limitations of the quantitative study reported in this chapter. More general limitations are discussed in Chapter 9. To assess a broad range of outcomes in this study, brief measures were selected to reduce the response burden on young participants. The PANAS-IS was used because it is a brief measure, however, it had not been validated for use with children, and assesses only high activation emotions as is common with all the PANAS measures. Class climate was assessed using only the friction and cohesion sub-scales of the MCI class climate measure. Future research of this programme should include a measure of emotions which includes both high and low activation positive
and negative emotions, a measure of self-concept or self-esteem, and a full measure of class climate. Cronbach’s alphas for some measures (e.g., positive and negative affect) were lower than reported in previous studies. This may have been due to greater variability in the young, relatively low SES group. Although the study focused on teaching and encouraging students to recognise strengths in each other, the extent to which students actually did this was not assessed quantitatively. Future research could consider including observational studies to assess the extent to which students notice and comment on strengths in each other in class, and also, the extent to which teachers notice strengths in each child.

Classroom teaching can change over time, so it cannot be ascertained that teachers provided a consistent level of strengths-related input for students during this study. For example, one teacher in the intervention group was absent for the school term following the post-test data collection until the follow-up. This may have reduced programme implementation and change during the follow-up period.

An important question for consideration concerns whether the Awesome Us intervention was effective because it taught children about their strengths (strategy) or because it provided students with time and attention from teachers and peers (process). It could be argued that the effective ingredients in this intervention were the time and attention given to participants to talk about themselves, which is likely to have been greater than that provided to control group students who received teaching as usual. The use of a placebo control group, which received equal time and attention should be considered in future research. However, an alternative view is that strengths provided a vehicle for teacher and students to have conversations about valuing each other, and for students to discuss what is right with you. These conversations do not occur spontaneously. If the introduction of a strengths focus to the classroom is what was required to bring about these discussions, then its importance in facilitating change should not be underrated.
Strengths of the Study

Strengths of this study include that it provides evidence that strengths interventions can influence desirable group (enhancement of modified class climate), as well as individual outcomes (enhanced relatedness, well-being, and engagement). This study also extends the range of intervention strategies demonstrated to produce these positive outcomes. The strategies adopted in this intervention included learning to recognise strengths in self and others, and using strengths to pursue self-concordant personal and friendship goals. These findings provide initial support for the model proposed in Figure 6.10, that noticing strengths in the classroom can enhance relatedness, modified class climate, and engagement. However, this study did not determine the mechanisms or pathways of change, so it cannot be ascertained that these pathways were in fact responsible for the reported changes in relatedness, engagement or modified class climate.

Figure 6.10. Supported effects of a classroom-based strengths intervention.
*Note.* Solid arrows = research evidence for this effect exists.

This study used a quasi-experimental design, with assessment at pre-test, post-test and follow-up. It was conducted across six schools, and included a control group, matched on
age, school year, and socio-economic status. The study used measures with evidence of psychometric adequacy to assess a broader range of desirable outcomes than have previously been assessed in a strengths intervention, including life satisfaction, positive and negative affect, engagement, modified class climate, strengths use, and relatedness, competence, and autonomy need satisfaction. The intervention programme, Awesome Us, maintained a high degree of consistency; all programmes were conducted by the same researcher, using the same materials and running order for each session, and with video recording of each programme session. High acceptability of and engagement with the programme was reported by students and teachers alike and completion rates for the student sample were over 98%.

Findings from this study also demonstrate that strength interventions can influence other desirable outcomes such as engagement, relatedness, and modified class climate. Engagement levels fall as students move from intermediate to secondary schooling (Ryan & Patrick, 2001) and they also tend to fall from start to end of an academic year (Skinner et al., 2009). Consequently, maintaining student engagement through one academic year ensures students start the next academic year in a stronger engagement position. An intervention that can prevent engagement levels falling across the school year is of immediate relevance to schools. The classes which received the strengths programme also avoided the pattern, observed in the control group, of a drop in levels of engagement, modified class climate and intrinsic need satisfaction at post-test. A strengths intervention may possibly be viewed as a way to accelerate students in a class getting to know each other and their teacher, and to begin to work together more effectively. Previous strengths research conducted in schools has not assessed the impact of the intervention on the overall group environment. As well as reassuring schools that strength interventions do not benefit individuals at the expense of the group, this finding of enhanced modified class climate provides an additional rationale for introducing the strengths approach to schools.
Pre-test scores for each variable in the present study were the single largest predictors of post-test and follow-up scores, indicating that these behavioural patterns are relatively stable and not always easy to modify. It is therefore notable that a brief programme did manage to modify important outcomes for learning and well-being. The statistically significant results presented in this chapter demonstrated small effect sizes (Cohen, 1988), ranging from partial eta squared = 0.02 for strengths use and modified class climate, through partial eta squared = 0.03 for classroom engagement, to partial eta squared = 0.04 for positive affect and relatedness. These effect sizes are similar or larger than those produced by another school-based strengths intervention (partial eta squared = 0.02 for life satisfaction; Proctor, Tsukayama, et al., 2011). Both of these studies with primary or secondary school-age students produced smaller effect sizes than two strengths interventions with university students (partial eta squared = 0.07 for both at post-test; Rashid, 2004; Rust et al., 2009). It is not possible to determine if participant age influenced outcomes, as the different intervention content, style, duration, and use of different measures may also have influenced results. The effect sizes of results from the 6-week Awesome Us intervention are similar to results for a briefer 1-week intervention with adults (Gander et al., 2012), however, different measures were used so direct comparison is not possible.

Further research will be necessary to determine how larger effect sizes or more long-lasting change can be achieved, and whether or not that will require for example, more intensive efforts, whole school implementation of a strengths programme, or the involvement of caregivers. However, the small effect size of these results does not necessarily indicate a lack of clinical or practical significance. Calculations of a general purpose effect size (BESD) indicated that at follow-up, participating students reported a 20% greater enhancement of positive affect and relatedness than the control group, 17% for classroom engagement, and 14% for modified class climate and strengths use.
Conclusion

This study has demonstrated that focusing on recognising strengths in self and others, and using strengths for self-concordant goals are effective strategies in a strengths intervention. Strengths programmes are rarely conducted as a solo activity at school; harnessing the power of the group to notice and affirm strengths can have benefits for learning and well-being. This study also provided preliminary evidence that strengths interventions can influence engagement, modified class climate, and student relatedness at school, in addition to individual well-being. Research has demonstrated the importance of relatedness for educational achievement. Using strengths programmes to build student-teacher and peer relationships may prove to be one of the most helpful ways in which a strengths intervention can be used in a school.

Primary school teachers who are responsible for their classroom for the school year exert considerable influence on the classroom environment and their relationships with students can predict engagement and achievement (Furrer & Skinner, 2003). Research has not yet explored whether or not teacher factors, such as teacher well-being and strengths orientation (attitude to strengths) will influence student outcomes. This topic will be addressed in the following chapter.
CHAPTER 7: Results of the Awesome Us Programme - Influence of Class Teachers on Student Outcomes

Introduction

This chapter examines the effects of the Awesome Us strengths programme on participating teachers, and the influence that teachers may have had on the outcomes reported by students. The effects of school-based strengths programmes on teacher well-being or strengths orientation (attitude towards strengths) have not been studied although some teachers delivering such programmes have noted personal benefits. One programme developer described a teacher report of feeling revitalised and reinvigorated for teaching following the strengths programme (J. Fox Eades, personal communication, July 7, 2011). Such changes may be accompanied by increases in teacher well-being. Teachers delivering the Awesome Us strengths programme observed strengths spotting between students and worked closely with students to help them identify and apply their strengths. Teachers were also asked to practice strengths spotting in their classes between programme sessions. It was anticipated that participation in these activities would result in a positive change in teacher strengths orientation. Research has not yet examined if changes in strengths orientation are typically accompanied by changes in strengths use.

Research has examined the influence of students’ behaviour on teacher well-being (Hastings & Bham, 2003), but to date little research has examined the effect of teacher well-being on student outcomes. One such study found that teacher well-being within primary schools was related to student academic performance and average staff well-being was found to account for 8% of the variance in academic test results (Briner & Dewberry, 2007). The potential for teacher influence on student outcomes was also suggested by research that demonstrated that a therapist’s attitude towards the strengths-based therapy they provided to
patients influenced therapy effectiveness (Cox, 2006). Patients in this study benefitted more when they were treated by a therapist delivering a form of therapy they endorsed, regardless of the modality.

Previous research on strengths programmes delivered in person has not examined the influence of contextual factors such as facilitator strengths orientation, strengths use or well-being, on programme effectiveness for participants (Austin, 2005; Proctor, Tsukayama, et al., 2011; Rashid, 2004; Rust et al., 2009). Primary school students spend most of their day with one class teacher, who influences the class climate and learning environment in many ways. Intermediate schools, although they introduce students to specialist teachers for a number of subjects, still maintain the primary school style of a home room, with one teacher who maintains primary responsibility for their class. In fact, the classroom can provide an excellent opportunity to study the influence of one individual on a strengths intervention delivered to many.

Teachers and students in the programme development focus groups readily observed that some strengths received more attention and acknowledgement in the classroom. If strengths acknowledgement, or strengths spotting, by teachers is viewed as a form of process praise (Dweck, 2002) or active constructive responding (Gable et al., 2004), it should facilitate engagement and relatedness with the student. Students who receive less strengths acknowledgement should therefore perform less well on measures of engagement, relatedness, and even positive affect. Teacher support, whether interpersonal or academic, has been demonstrated to influence student engagement in the classroom (Fredricks, Blumenfeld, & Paris, 2004; Ryan & Patrick, 2001). It has also been demonstrated that teachers are more likely to provide support to engaged than disengaged students. Thus a dynamic process occurs whereby already engaged students engage more, and those students perceived as less engaged, disengage even further (Skinner, Kindermann, Connell, &
Wellborn, 2009; Skinner et al., 2009). It was considered possible for this research therefore, that students whose strengths receive positive attention in class might experience an upward spiral of engagement, relatedness, and possibly also positive affect. A classroom in which the teacher increasingly notices and comments on student strengths might also be expected to experience positive changes in class climate.

It was predicted that:

- teachers who participated in the strengths programme would experience a greater positive change in well-being and strengths orientation than teachers who practiced teaching as usual. Although no hypothesis was made about changes in teacher strengths use, exploratory analysis of this variable was included;
- the change in teacher well-being and strengths orientation from pre-test to follow-up would contribute to student positive affect, class engagement, modified class climate, and relatedness, at follow-up, while controlling for other major influences. Although no hypothesis was made about the influence of teacher strengths use on student outcomes due to lack of previous research, exploratory analysis of this variable was also conducted; and
- students whose strengths were highly valued by their teachers would experience higher levels of well-being, engagement, relatedness, and strengths use at follow-up, than students whose strengths were not highly valued by their teachers.

**Method**

The method for both this part of the study and the results presented in Chapter 6 is provided in Chapter 4, and describes the participants, measures and procedure used.
Analytical Strategy

Data were entered using the SPSS statistical analysis software package, version 20 (IBM Corp., Released 2011). Student’s t-tests were conducted to determine if significant differences existed between the teacher intervention and control groups at pre-test, post-test, and follow-up, or in the changes to these variables across these time periods. Multiple regressions were conducted to determine the unique contributions of changes in teacher well-being, strengths use, and strengths orientation to changes in student outcome variables. High and low match groups were created comprising students whose strengths matched those of their teachers and students whose strengths did not match. ANOVAs of group differences between high and low match groups were carried out to determine if there were significant differences between the groups in well-being, engagement, or relatedness.

Preliminary Analyses

Prior to running analyses, missing values and outliers were dealt with and assumptions of normality tested for each outcome variable. Assumptions of homogeneity were tested using Levene’s test of equality of error variances, and assumptions of homogeneity of intercorrelations (in the Strengths Match groups) were tested using Box’s test of equality of covariance matrices. Seven teachers were included in the intervention group as one class had two part-time teachers. The control group included three teachers. Missing data analysis indicated that data were missing at random. Cases with missing data were excluded on a pairwise basis from ANOVA and t-test analysis, and listwise from regression analysis. More details of treatment of missing values and outliers, and assessment of normality are provided in Appendix H. Results of the power calculations for the analyses specified above indicated that the teacher sample was inadequate to test for differences between the teacher groups, and that the achieved sample to test for differences between the strengths-match groups was also very underpowered. Accordingly, these analyses must be
regarded with caution as they are susceptible to both Type I and Type II errors. The power calculations for the regressions of teacher variables on student outcomes indicated that this study was adequately powered to detect moderate sized effects, but not small effects. Therefore, some of these results may also require caution in their interpretation.
Descriptive Statistics

Differences in Personal Characteristics

Demographic data collected on teachers were limited to teaching experience (years) and gender. The study group contained five female and five male teachers; all control group teachers were male. Table 7.1 provides detail on the teaching experience of intervention and control group teachers who were all experienced in their roles. Both groups included teachers with 6-10, 11-20, and more than 20 years teaching experience.

Table 7.1
Teaching Experience of Intervention and Control Group Teachers

<table>
<thead>
<tr>
<th>Years of Experience</th>
<th>Intervention Frequency</th>
<th>% Frequency</th>
<th>Control Frequency</th>
<th>% Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 years</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6-10 years</td>
<td>1</td>
<td>14.2</td>
<td>1</td>
<td>33.3</td>
</tr>
<tr>
<td>11-20 years</td>
<td>3</td>
<td>42.9</td>
<td>1</td>
<td>33.3</td>
</tr>
<tr>
<td>20+ years</td>
<td>3</td>
<td>42.9</td>
<td>1</td>
<td>33.3</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100.0</td>
<td>3</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Descriptive Statistics of the Study Variables

Mean scores and standard deviations of teacher well-being, strengths use, and strengths orientation, for the intervention and control groups are presented in Table 7.2, with internal consistency reliabilities for the study sample for the Warwick Edinburgh Mental Well-Being Scale (WEMWBS), the Strengths Use Scale, and the Strengthspotting Scale.
CHAPTER 7: Results – Influence of Class Teachers in Student Outcomes

Table 7.2
Descriptive Statistics – Teacher Variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Well-being</td>
<td>Int</td>
<td>53.43 (5.00)</td>
<td>55.14 (3.34)</td>
<td>54.67 (6.09)</td>
</tr>
<tr>
<td></td>
<td>Con</td>
<td>56.00 (1.00)</td>
<td>56.67 (4.16)</td>
<td>47.50 (6.36)</td>
</tr>
<tr>
<td>Strengths use</td>
<td>Int</td>
<td>74.71 (9.62)</td>
<td>75.29 (10.08)</td>
<td>76.33 (9.63)</td>
</tr>
<tr>
<td></td>
<td>Con</td>
<td>78.00 (4.58)</td>
<td>82.00 (5.29)</td>
<td>73.50 (4.95)</td>
</tr>
<tr>
<td>Strengths orientation</td>
<td>Int</td>
<td>83.67 (21.39)</td>
<td>109.71 (17.45)</td>
<td>100.33 (17.42)</td>
</tr>
<tr>
<td></td>
<td>Con</td>
<td>82.00 (23.52)</td>
<td>86.33 (30.04)</td>
<td>90.00 (11.31)</td>
</tr>
</tbody>
</table>

Note. Int = Intervention. Con = Control. α = Cronbach’s alpha. Data excluded pairwise; n = 10 at pre-test and post-test, n = 8 at +3mo. Well-being = Warwick Edinburgh Mental Well-being Scale. Strengths use = Strengths Use Scale. Strengths orientation = Strengthspotting Scale.

Mean strengths orientation sub-scale scores and standard deviations for intervention and control groups are provided in Table 7.3.

Table 7.3
Means of Sub-scales of Strengthspotting Scale (Measure of Strengths Orientation)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M  SD</td>
<td>M  SD</td>
<td>M  SD</td>
</tr>
<tr>
<td>Ability</td>
<td>Int</td>
<td>17.67 4.84</td>
<td>21.43 2.94</td>
<td>20.00 3.03</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>18.00 3.61</td>
<td>18.00 5.57</td>
<td>19.00 1.41</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>17.78 4.24</td>
<td>20.40 3.92</td>
<td>19.75 2.66</td>
</tr>
<tr>
<td>Emotion</td>
<td>Int</td>
<td>18.00 5.87</td>
<td>22.29 3.68</td>
<td>19.83 3.49</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>17.67 2.08</td>
<td>17.67 4.51</td>
<td>16.50 0.71</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>17.89 4.76</td>
<td>20.90 4.31</td>
<td>19.00 3.34</td>
</tr>
<tr>
<td>Frequency</td>
<td>Int</td>
<td>14.83 5.74</td>
<td>20.86 4.06</td>
<td>19.17 4.40</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>13.67 8.14</td>
<td>16.67 7.37</td>
<td>19.00 1.41</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>14.44 6.13</td>
<td>19.60 5.21</td>
<td>19.13 3.76</td>
</tr>
<tr>
<td>Motivation</td>
<td>Int</td>
<td>19.83 5.34</td>
<td>23.29 4.11</td>
<td>21.17 5.19</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>20.33 3.21</td>
<td>18.00 7.21</td>
<td>20.00 2.83</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>20.00 4.53</td>
<td>21.70 5.42</td>
<td>20.88 4.55</td>
</tr>
<tr>
<td>Application</td>
<td>Int</td>
<td>13.33 4.93</td>
<td>21.86 3.76</td>
<td>20.17 2.86</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>12.33 6.66</td>
<td>16.00 7.21</td>
<td>15.50 4.95</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>13.00 5.15</td>
<td>20.10 5.38</td>
<td>19.00 3.74</td>
</tr>
</tbody>
</table>

Note. Int = Intervention.
Pearson product correlation coefficients (zero-order correlations) for the teacher well-being, strengths use, and strengths orientation at pre-test, post-test, and follow-up are set out in Table 7.4. None of the correlations was significant ($p < .05$).

### Table 7.4
**Correlation Coefficients for Teacher Variables at Pre-test, Post-test, and Follow-Up**

<table>
<thead>
<tr>
<th></th>
<th>Well-being</th>
<th>Strengths use</th>
<th>Strengths orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-test</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-being</td>
<td>-</td>
<td>.058</td>
<td>-.408</td>
</tr>
<tr>
<td>Strengths use</td>
<td>-</td>
<td>-</td>
<td>.307</td>
</tr>
<tr>
<td>Strengths orientation</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Post-test</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-being</td>
<td>-</td>
<td>.229</td>
<td>.042</td>
</tr>
<tr>
<td>Strengths use</td>
<td>-</td>
<td>-</td>
<td>.361</td>
</tr>
<tr>
<td>Strengths orientation</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Follow-up</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-being</td>
<td>-</td>
<td>.487</td>
<td>.424</td>
</tr>
<tr>
<td>Strengths use</td>
<td>-</td>
<td>-</td>
<td>.678</td>
</tr>
<tr>
<td>Strengths orientation</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Data excluded pairwise; $n = 10$ at pre-test and post-test, $n = 8$ at follow-up. Well-being = Warwick Edinburgh Mental Well-being Scale. Strengths use = Strengths Use Scale. Strengths orientation = Strengthspotting Scale. No correlations were significant at $p < .05$.

A table of bivariate correlations between student outcomes at follow-up and the change in teacher variables from pre-test to follow-up is provided in Table 7.5. Increases in teacher strengths orientation were significantly correlated with increases in engagement, modified class climate, relatedness and overall intrinsic need satisfaction. Changes in teacher well-being (which overall were slightly negative) and strengths use were not significantly correlated with any student outcome variables at follow-up.
**Table 7.5**

*Correlations of Teacher Change Variables from Pre-test to Follow-Up and Student Outcomes at Follow-Up*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<tbody>
<tr>
<td>1. T.Well-being</td>
<td>-</td>
<td>.568**</td>
<td>.082</td>
<td>.038</td>
<td>-.117</td>
<td>-.056</td>
<td>.007</td>
<td>-.025</td>
</tr>
<tr>
<td>n</td>
<td>193</td>
<td>193</td>
<td>189</td>
<td>187</td>
<td>189</td>
<td>187</td>
<td>189</td>
<td>189</td>
</tr>
<tr>
<td>2. T.Strengths use</td>
<td>-</td>
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<td>.005</td>
<td>-.070</td>
<td>.034</td>
<td>.027</td>
<td>.049</td>
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</tr>
<tr>
<td>n</td>
<td>193</td>
<td>189</td>
<td>187</td>
<td>189</td>
<td>187</td>
<td>189</td>
<td>189</td>
<td>189</td>
</tr>
<tr>
<td>3. T.Strengths orientation</td>
<td>-</td>
<td>.099</td>
<td>.177*</td>
<td>.369**</td>
<td>.103</td>
<td>.235**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>189</td>
<td>187</td>
<td>189</td>
<td>187</td>
<td>189</td>
<td>189</td>
<td>189</td>
<td>189</td>
</tr>
<tr>
<td>4. Positive affect</td>
<td>-</td>
<td>.491**</td>
<td>.102</td>
<td>.534**</td>
<td>.402**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
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<td>189</td>
<td>189</td>
<td>189</td>
<td>189</td>
</tr>
<tr>
<td>5. Classroom engagement</td>
<td>-</td>
<td>.331**</td>
<td>.540**</td>
<td>.656**</td>
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<td>189</td>
<td>189</td>
<td>189</td>
<td>189</td>
<td>189</td>
</tr>
<tr>
<td>6. Modified class climate</td>
<td>-</td>
<td>.205**</td>
<td>.330**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>187</td>
<td>189</td>
<td>189</td>
<td>189</td>
<td>189</td>
<td>189</td>
<td>189</td>
<td>189</td>
</tr>
<tr>
<td>7. S. Strengths use</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.598**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>187</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>189</td>
<td></td>
<td>189</td>
</tr>
</tbody>
</table>

**Note:** T.Well-being = Change in Teacher Well-being. T.Strengths use = Change in Teacher Strengths Use. T.Strengths orientation = Change in Teacher Strengths Orientation. S. Strengths use = Student strengths use. Data excluded pairwise. n = sample size. * = p < 0.05 level (2-tailed). ** = p < .01.

**Differences in Teacher Well-being, Strengths Use, and Strengths Orientation**

The number of teachers in the intervention (n = 7) and control (n = 3) groups were very small. Hence, it was not anticipated that significant results would be obtained from analysis of this sample, which was intended primarily to examine the influence of teachers on students’ outcomes. Student’s *t*-tests demonstrated no statistically significant differences between the groups at any time point on any of the measures. However, *t*-test analyses demonstrated significant group differences of change scores, using changes in strengths use and strengths orientation between specific time periods. These results must be treated with caution. They are provided primarily to describe the teacher sample group used in the following analysis of the influence of teacher variables on student outcomes.
Student’s t-tests indicated that there were no significant differences between mean well-being scores for teachers in the intervention and control groups at pre-test, and no significant differences between them in the change in well-being scores within any of the time periods assessed. Well-being and standard error (SE) scores at each time period, illustrated in Figure 7.1, show stable well-being levels in the intervention group while well-being in the control group fell from post-test to follow-up.

![Figure 7.1. Teacher well-being scores (+SE) for intervention and control groups at pre-test, post-test, and follow-up.](image)

Student’s t-tests indicated that there was no significant difference between mean strengths use scores for teachers in the intervention and control groups at pre-test, and no significant differences between changes in strengths use from pre-test to post-test, or from pre-test to follow-up, as illustrated in Figure 7.2. However, the change in strengths use from post-test to follow-up was significantly greater for intervention group teachers \((M = 2.50, SD = 3.45)\) than control group teachers, \((M = -11.50, SD = 6.36)\); \(t(6) = 4.200, p = .006\), two-tailed), where a negative mean change score indicated a fall in the strengths use score over the time period in question. This was largely due to a fall in strengths use reported by control
CHAPTER 7: Results – Influence of Class Teachers in Student Outcomes

group teachers in this period while strengths use among intervention group teacher remained stable.

![Graph showing teacher strengths use scores (±SE) for intervention and control groups at pre-test, post-test, and follow-up.]

*Figure 7.2.* Teacher strengths use scores (±SE) for intervention and control groups at pre-test, post-test, and follow-up.

Student’s *t*-tests indicated that there was no significant difference between intervention and control group teachers’ mean strengths orientation scores at pre-test. However, the change in strengths orientation from pre-test to post-test was significantly greater for intervention (*M*= 23.33, *SD*= 12.14) than control group teachers, (*M*=4.33, *SD*= 7.51); *t* (7) = 2.438, *p* = .045, two-tailed, as shown in Figure 7.3. This means that intervention group teachers experienced a significantly greater positive change in their attitude towards strengths over this period than control group teachers. This change difference was not sustained from post-test to follow-up and there were no significant differences between the groups across this last time period. Differences between the groups from pre-test to follow-up were also not significant.

Examination of the five sub-scales of the strengths orientation measure (ability, emotion, frequency, motivation, and application) indicated that changes occurred in each of the sub-scales for the intervention group, but not the control group. The largest changes for
the intervention group in *frequency* and *application*. The pattern of strengths orientation scores among intervention group teachers was for scores to increase from pre-test to post-test and then for scores to fall slightly from post-test to follow-up, but remain above pre-test levels.

![Graph showing teacher strengths orientation scores (±SE) for intervention and control groups at pre-test, post-test, and follow-up.](image)

*Figure 7.3* Teacher strengths orientation scores (±SE) for intervention and control groups at pre-test, post-test, and follow-up.

**Teacher Influence on Student Outcomes**

To examine the influence of teacher variables on student outcomes, the change in teacher variables from pre-test to follow-up was selected because it captured the trajectory of teacher changes across the full study period. Bi-variate correlations between teacher change variables and student outcomes indicated significant correlations existed at follow-up between teacher strengths orientation and student engagement, modified class climate, and relatedness (Table 7.5). A series of hierarchical regressions were performed on these outcomes and positive affect, all of which had previously demonstrated significant differences between intervention and control groups (Chapter 6). Variables to be controlled for were entered in a first block, and then teacher well-being, teacher strengths use, and
teacher strengths orientation were entered in a second block. Where the second block of
variables produced a significant change to the model, and where one of the teacher variables
ccontributed unique variance to the model, this was regarded as evidence of a teacher effect.

Two teachers (one from the intervention and one from the control group) did not
return a completed survey at follow-up. The intervention group teacher with missing data
job-shared with another teacher whose survey had been completed and so this was used. In
the case of the control group teacher the change from pre-test to post-test was used instead of
pre-test to follow-up. As eight of nine teachers reported more positive changes from pre-test
to post-test than post-test to follow-up, this substitution strategy could be considered an
overly-positive estimate of the control group teacher’s changes from post-test to follow-up,
and therefore a conservative strategy.

Change in Teacher Well-being, Strengths Use, and Strengths Orientation as Predictors
in Regressions of Student Outcomes

A series of hierarchical regressions were performed where mean scores for each of
student positive affect, classroom engagement, modified class climate, and relatedness at
follow-up served as the outcome variable, and mean pre-test scores for those variables,
gender, and the teacher change variables from pre-test to follow-up for strengths orientation,
well-being, and strengths use were entered as predictors. Earlier multiple regressions of
student outcomes with gender, age, and year had indicated that only gender was a significant
predictor. In addition, previous analyses of variance had indicated that for each student
outcome, pre-test variables were also significant predictors, and so it was decided to control
for pre-test variables and gender in these analyses.

Pre-test variables and gender were controlled for by entering these variables in step 1.
The change in teacher strengths orientation was entered in step 2, change in teacher well-
being at step 3, and changes in teacher strengths use in step 4. Previous regressions, where all the teacher change variables were entered in one step indicated that the change in teacher strengths orientation was a significant predictor of a number of student outcomes, while the change in teacher well-being was a significant predictor of only one variable, and the change in teacher strengths use was not a significant predictor of any outcome. These preliminary analyses supported the theoretical justification for entering the change in teacher strengths orientation first, namely that in previous research therapist strengths orientation has been shown to influence patient outcomes (Cox, 2006).

For each student outcome, scatterplots of standardized residuals and predicted values and normal probability plots (P-P) were examined and suggested no major deviations from normality were present. Correlations are reported for each regression. These together with statistics for Tolerance (all above .20) and VIF (below 10) suggested that multicollinearity was not a concern in any of the regressions. Durbin-Watson statistics were also reported to be satisfactory for each regression analysis (within 1-3 range, and close to the target level of 2), suggesting that the assumption of independent errors was met. With the use of a \( p < .001 \) criterion for Mahalanobis distance, no outliers were found among the cases. Cook’s Distance values, reported for each regression, were within acceptable levels suggesting that no cases had undue influence on the regression models. Statistics on model validity for all the regressions are included in Appendix I. No data were missing (as previously stated, change variables for one control group teacher were from pre-test to post-test rather than follow-up) and no suppressor variables were identified in the regressions.

A table is provided for each regression, which displays the correlations between the variables, the unstandardised regression coefficients (\( B \)) and intercept, the standardised regression coefficients (Beta), the \( R^2 \) for the initial model, change in \( R^2 \) for each subsequent model, and \( R^2 \) and adjusted \( R^2 \) for the final model (see Table 7.6).
Regressions of teacher change variables on student positive affect at follow-up.

Table 7.6 displays the results of the regression with student positive affect at follow-up as the outcome variable. After step 4, with all the predictors in the model, adjusted $R^2$ was .15, $F(5,182) = 7.458, p < .001$. After step 2, with change in teacher strengths orientation added to the model, the change in $R^2$ of .022 was significant, $F$ Chg $(1, 184) = 4.923, p = .028$.

Neither step 3 nor step 4 added significantly to the model’s ability to explain variance in positive affect at follow-up. In the final model only pre-test positive affect and the change in teacher strengths orientation were statistically significant; the square of the semipartial correlations of .149 for the change in teacher strengths orientation, indicated that the change in teacher strengths orientation explained 2.2% of the variance in student positive affect at follow-up. The adjusted $R^2$ for the model is low at 15%; the model is not a satisfactory model of the influences on positive affect. It does however show that the change in teacher strengths orientation did influence student positive affect.

Table 7.6
Hierarchical Regression of Positive Affect at Pre-test (T1), Gender, and Change in Teacher Variables, on Student Positive Affect at Follow-Up (T3)

<table>
<thead>
<tr>
<th></th>
<th>Positive affect (T3)</th>
<th>Gender</th>
<th>Positive affect (T1)</th>
<th>Strengths orientation</th>
<th>Well-being</th>
<th>Strengths use</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>$R^2$ (chg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender Positive affect (T1)</td>
<td>-.124*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.832</td>
<td>0.507</td>
<td>-.11</td>
<td></td>
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<tr>
<td>Strengths orientation</td>
<td>.360**</td>
<td>.025</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>0.351</td>
<td>0.062</td>
<td>.39**</td>
<td>.15*</td>
</tr>
<tr>
<td>Well-being Strengths use</td>
<td>.098</td>
<td>-.126*</td>
<td>-.177*</td>
<td>-</td>
<td></td>
<td></td>
<td>0.047</td>
<td>0.021</td>
<td>.15*</td>
<td>.02*</td>
</tr>
<tr>
<td>Intercept</td>
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<td>-.083</td>
<td>.005</td>
<td>.078</td>
<td></td>
<td></td>
<td>0.012</td>
<td>0.035</td>
<td>.03</td>
<td>.00</td>
</tr>
<tr>
<td>Means</td>
<td>17.42</td>
<td>0.55</td>
<td>16.79</td>
<td>13.17</td>
<td>-1.06</td>
<td>1.08</td>
<td>11.391</td>
<td>1.192</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Std Dev</td>
<td>3.694</td>
<td>0.498</td>
<td>4.093</td>
<td>12.081</td>
<td>8.773</td>
<td>9.032</td>
<td></td>
<td>R² = .17*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjust R²</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R = .41**</td>
<td></td>
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</tr>
</tbody>
</table>

Note. Strengths orientation = Change in teacher strengths orientation. Well-being = Change in teacher well-being. Strengths use = Change in teacher strengths use. *p < .05. ** p < .001
Regressions of teacher change variables on student classroom engagement at follow-up. Table 7.7 displays the results of the hierarchical regression with classroom engagement at follow-up as the outcome variable. After step 4, with all the predictors in the model, adjusted $R^2$ was .45, $F(5,154) = 26.708, p < .000$. After step 2, with change in teacher strengths orientation added to the model, the change in $R^2$ of .014 was significant, $F_{Chg}(1, 156) = 4.061, p = .046$. Neither step 3 nor step 4 added significant changes in $R^2$ to the model. In the final model only pre-test classroom engagement and the change in teacher strengths orientation were statistically significant. The square of the semipartial correlations of .118 for the change in teacher strengths orientation indicated that this change explained 1.4% of the variance in classroom engagement at follow-up, demonstrating that the change in teacher strengths orientation significantly influenced student engagement in this sample.

<table>
<thead>
<tr>
<th></th>
<th>Engage-</th>
<th>Engage-</th>
<th>Strengths</th>
<th>Well-</th>
<th>Strengths</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>$R^2$ (chg)</th>
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</thead>
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<tr>
<td>Gender</td>
<td>-.275**</td>
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<td></td>
<td>-.1599</td>
<td>1.292</td>
<td>-.08</td>
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<td>Engagement (T1)</td>
<td>.663**</td>
<td>.309**</td>
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<td></td>
<td></td>
<td>.644</td>
<td>0.065</td>
<td>.63**</td>
<td>.44**</td>
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<tr>
<td>Strengths orientation</td>
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<td>-.098</td>
<td>.014</td>
<td></td>
<td></td>
<td>.098</td>
<td>0.049</td>
<td>.12*</td>
<td>.01*</td>
</tr>
<tr>
<td>Well-being Strengths use</td>
<td>-.140*</td>
<td>-.120</td>
<td>-.156*</td>
<td>.120</td>
<td></td>
<td>-.114</td>
<td>0.087</td>
<td>-.10</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>-.070</td>
<td>-.032</td>
<td>-.146*</td>
<td>.179*</td>
<td>.575**</td>
<td>.060</td>
<td>0.083</td>
<td>.05</td>
<td>.00</td>
</tr>
<tr>
<td>Intercept</td>
<td></td>
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<td></td>
<td></td>
<td>4.731</td>
<td>1.573</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Means 14.09 0.54 13.50 13.39 -1.32 1.03
Std Dev 10.215 0.500 9.982 12.497 8.598 9.032

$R^2 = .46$
Adjusted $R^2 = .45$
$R = .68$

*Note.* Strengths orientation = Change in teacher strengths orientation. Well-being = Change in teacher well-being. Strengths use = Change in teacher strengths use. Engagement = Classroom engagement.

*p < .05. ** p < .001
Regressions of teacher change variables on modified class climate at follow-up.

Table 7.8 displays the results of the hierarchical regression with modified class climate at follow-up as outcome variable. After step 4, with all the predictors in the model, adjusted $R^2$ was .37, $F (5,175) = 22.002, p < .001$. After step 2, with change in teacher strengths orientation added to the model, the change in $R^2$ of .090 was significant, $F_{Chg} (1, 177) = 25.729, p < .001$. Neither step 3 nor step 4 added significant changes in $R^2$ to the model. In the final model only pre-test modified class climate and the change in teacher strengths orientation were statistically significant. The square of the semipartial correlations of .298 for teacher strengths orientation indicated that this factor explained 9% of the variance in modified class climate at follow-up. This demonstrated that the change in teacher strengths orientation had significantly influenced classroom climate.

Table 7.8

Hierarchical Regression of Modified Class Climate at Pre-test (T1), Gender, and Change in Teacher Variables, on Student Class at Follow-Up (T3)

<table>
<thead>
<tr>
<th></th>
<th>Mod. class climate (T3)</th>
<th>Mod. class climate (T1)</th>
<th>Strengths orientation</th>
<th>Well-being</th>
<th>Strengths use</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>$R^2$ (chg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>- .171*</td>
<td>-</td>
<td>-</td>
<td>- .200</td>
<td>0.115</td>
<td>- .105</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mod. class climate (T1)</td>
<td>.521**</td>
<td>-.051</td>
<td>-</td>
<td>.533</td>
<td>0.066</td>
<td>.486**</td>
<td>.29**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strengths orientation</td>
<td>.359**</td>
<td>-.149*</td>
<td>.082</td>
<td>-.024</td>
<td>0.005</td>
<td>.303**</td>
<td>.09**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-being</td>
<td>-.062</td>
<td>-.080</td>
<td>-.107</td>
<td>-.008</td>
<td>0.008</td>
<td>-.071</td>
<td>.00</td>
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</tr>
<tr>
<td>Strengths use</td>
<td>.028</td>
<td>-.020</td>
<td>-.040</td>
<td>.006</td>
<td>0.008</td>
<td>.058</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td></td>
<td></td>
<td></td>
<td>-.468</td>
<td>0.116</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Means: -0.463 0.56 -0.404 13.08 -1.08 1.08
Std Dev: 0.950 0.497 .866 11.859 8.726 9.054

$R^2 = .39$
Adjusted $R^2 = .37$

Note. Mod. class climate = Modified class climate. Strengths orientation = Change in teacher strengths orientation. Well-being = Change in teacher well-being. Strengths use = Change in teacher strengths use. *p < .05. **p < .001
Regressions of teacher change variables on relatedness at follow-up. Table 7.9 displays the results of the hierarchical regression with relatedness at follow-up as outcome variable. After step 4, with all the predictors in the model, adjusted $R^2$ was .36, $F(5,182) = 22.227$, $p = .000$. After step 2, with change in teacher strengths orientation added to the model, the change in $R^2$ of .04 was significant, $F$ Chg (1, 184) = 10.324, $p = .002$. Neither step 3 nor step 4 added significant changes in $R^2$ to the model. In the final model gender, pre-test relatedness, and the change in teacher strengths orientation were all statistically significant. The square of the semipartial correlations of .185 for the change in teacher strengths orientation indicated that this factor explained 4% of the variance in relatedness at follow-up, providing further evidence for the influence of teacher strengths orientation on student outcomes.

Table 7.9

Hierarchical Regression of Relatedness at Pre-test (T1), Gender, and Change in Teacher Variables, on Student Relatedness at Follow-Up (T3)

<table>
<thead>
<tr>
<th></th>
<th>Rel (T3)</th>
<th>Gender</th>
<th>Rel (T1)</th>
<th>Strengths orientation</th>
<th>Well-being</th>
<th>Strengths use</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>$R^2$ (chg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.269**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.601</td>
<td>0.268</td>
<td>-.136*</td>
<td></td>
</tr>
<tr>
<td>Rel (T1) Strengths orientation</td>
<td>.556**</td>
<td>-.229**</td>
<td>-</td>
<td>.601</td>
<td>0.069</td>
<td>.522**</td>
<td>.33**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-being Strengths use</td>
<td>-.025</td>
<td>-.083</td>
<td>.069</td>
<td>.078</td>
<td>-.035</td>
<td>.018</td>
<td>.137</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>.051</td>
<td>-.013</td>
<td>.028</td>
<td>.123*</td>
<td>.567**</td>
<td>.022</td>
<td>.090</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.919</td>
<td>1.161</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Means</td>
<td>15.68</td>
<td>0.55</td>
<td>15.94</td>
<td>13.17</td>
<td>-1.06</td>
<td>1.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Std Dev</td>
<td>2.203</td>
<td>0.498</td>
<td>1.913</td>
<td>12.081</td>
<td>8.773</td>
<td>9.032</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Rel = Relatedness. Strengths orientation = Change in Teacher Strengths Orientation. Well-being = Change in Teacher Well-being. Strengths use = Change in Teacher Strengths Use. *p < .05. **p < .001
Summary of regressions of teacher change variables on student outcomes. In each of the final regression models, the change in teacher strengths orientation and the pre-test student variable were statistically significant predictors of the student outcome at follow-up. Teacher well-being and teacher strengths use were not significant predictors in any model. The change in teacher strengths orientation explained a significant percentage of the variance in student outcomes at follow-up, ranging from 1.4% of classroom engagement, through 2.2% of positive affect and 4% of relatedness, to 9% of the variance in class climate at follow-up. Adjusted $R^2$ for the models indicated that they explained from 15% (positive affect) to 44% (relatedness) of the influences on the student outcomes in question.

Comparison of High and Low Strengths Match Groups

At pre-test, intervention group teachers ranked the 24 VIA strengths in order of those they valued most in the classroom. It was anticipated that student displays of a teacher’s most valued strengths would receive more attention and acknowledgement from the teacher than similar displays of the teacher’s least valued strengths. Each teacher’s five most valued and five least valued strengths were compared to their students’ top five strengths, identified by intervention group students as part of the strengths programme. A high strengths-match group was created that included only those students for whom at least three of the students’ top 5 strengths matched with the top 5 most valued strengths of their teacher. A low strengths-match group was created that included only those students for whom none of the students’ top 5 strengths featured in their teachers’ top 5 most valued strengths, and in addition, two or more of the students’ top 5 strengths featured in their teachers’ bottom 5 least valued strengths. Students whose strengths did not fit these criteria were not included in the strengths match analysis. Means for the high and low strengths-match groups at each time period in the study, which included only 10 and six intervention group students respectively, are reported in Table 7.10.
CHAPTER 7: Results – Influence of Class Teachers in Student Outcomes

Table 7.10

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engagement</td>
<td>High-match</td>
<td>18.43 (8.40)</td>
<td>17.14 (10.56)</td>
<td>16.29 (6.73)</td>
</tr>
<tr>
<td></td>
<td>Low-match</td>
<td>7.75 (10.50)</td>
<td>14.50 (3.70)</td>
<td>11.25 (7.97)</td>
</tr>
<tr>
<td>Positive affect</td>
<td>High-match</td>
<td>17.60 (3.47)</td>
<td>18.30 (3.65)</td>
<td>16.40 (4.70)</td>
</tr>
<tr>
<td></td>
<td>Low-match</td>
<td>13.60 (4.04)</td>
<td>14.20 (5.07)</td>
<td>16.00 (1.87)</td>
</tr>
<tr>
<td>Modified class climate</td>
<td>High-match</td>
<td>0.175 (1.07)</td>
<td>0.167 (0.86)</td>
<td>0.40 (1.10)</td>
</tr>
<tr>
<td></td>
<td>Low-match</td>
<td>0.083 (0.93)</td>
<td>0.292 (1.04)</td>
<td>0.19 (0.86)</td>
</tr>
<tr>
<td>Relatedness</td>
<td>High-match</td>
<td>15.90 (1.10)</td>
<td>16.00 (2.06)</td>
<td>16.40 (2.07)</td>
</tr>
<tr>
<td></td>
<td>Low-match</td>
<td>15.40 (1.67)</td>
<td>15.00 (2.00)</td>
<td>14.80 (1.30)</td>
</tr>
<tr>
<td>Strengths use</td>
<td>High-match</td>
<td>83.67 (10.97)</td>
<td>82.89 (13.26)</td>
<td>74.78 (23.37)</td>
</tr>
<tr>
<td></td>
<td>Low-match</td>
<td>71.00 (28.50)</td>
<td>78.25 (11.96)</td>
<td>66.50 (15.80)</td>
</tr>
</tbody>
</table>

*Note.* None of the group differences reached statistical significance.

Mixed between-within subjects ANOVAs indicated that differences between the high and low strengths-match groups did not reach required significance levels, which may be due to the small sample size. Results in the groups were extremely variable as indicated by the high standards deviations within each group at certain time periods, particularly for engagement, modified class climate, and strengths use. It is therefore difficult to draw any conclusions about this analysis. However, the patterns of these data are intriguing, as they suggest the low-strengths match group benefited from the strengths programme, but only for its duration, and then differences between the groups on a number of variables returned to pre-test levels in most cases.

It is of interest to note that when standards for the high and low match groups were set less stringently, (i.e., the high-match group included students who had two or more top strengths in their teacher’s most valued five strengths, and low-match group included students who had none of their top strengths in their teacher’s most valued five), this
produced a larger sample size \((n = 37\) in high match, \(n = 26\) in low match), but \(p\) values statistics were further from significance than for the smaller group.

**Discussion**

The results of this study must be treated cautiously as the small sample size means that the analysis was underpowered to detect effects and results may include false negatives as well as false positives. These results suggest support for the hypothesis that teachers who participated in the strengths programme would experience a greater positive change in strengths orientation (attitude towards strengths) than control group teachers, but the hypothesis that teacher well-being would also be enhanced was not supported. The hypothesis that the change in teacher well-being and strengths orientation from pre-test to follow-up would contribute to student positive affect, engagement, modified class climate, and relatedness at follow-up, was supported for strengths orientation but not for well-being. Exploratory analysis of group differences in teacher strengths use indicated no significant differences over the study period, and changes in teacher strengths use did not contribute to student outcomes. The hypothesis that significant differences would be found on a range of student outcomes for particular students whose strengths were highly valued by their teachers when compared to particular students whose strengths were least valued, was not supported. It is possible that non-significant findings may have been due to lack of power in some of these analyses where sample sizes were small.

**Teacher Differences in Strengths Orientation, Well-being, and Strengths Use**

Teachers in the intervention group reported significantly higher changes in their strengths orientation scores than control group teachers from pre-test to post-test, but not from post-test to follow-up. The group differences over the period of the strengths programme may be attributed to the weekly reminders presented by the programme or
possibly due to watching their students learning and talking about their strengths. After the
programme, despite the fact that the pre- to post-test gains were reduced, intervention group
teachers remained at a higher level of strengths orientation than those who had not taken part
in the programme. This suggests that participation in the strengths programme did produce a
sustained change in teachers’ strengths orientation as measured in this study.

It is of interest that the positive change in teachers’ strengths orientations did not
translate into significant increases in either strengths use or personal well-being. One
possible explanation for this is that teachers viewed the programme as being for students, and
despite finding it useful for their classes, did not consider practising it personally. The
differences observed in teachers’ well-being between the groups suggest that teachers taking
part in the programme experienced less of a reduction in well-being than those in the control
group. However, as differences in this small sample were not statistically significant, further
investigation of well-being changes in a larger teacher sample may prove worthwhile.
Results for teacher strengths use were largely unchanged over the study period in the
intervention group while scores for the control group showed more variable responding. This
may have been due to a pattern of socially desirable responding (Paulhus, 2002) at pre- and
post-test among control group teachers who knew a strengths programme was taking place in
other classes.

**Teacher Influences on Student Outcomes**

Analysis indicated that the positive change in teacher strengths orientation influenced
a range of student outcomes. This was the case whether the regressions included all three
teacher change variables in one block or when they were entered independently. The change
in teacher attitudes towards strengths from pre-test to follow-up, explained 1-2% of the
variance in student positive affect and classroom engagement, 3-4% of the variance in student
relatedness and overall intrinsic need satisfaction, and 9% of the variance in modified class
climate. These results provide consistent evidence of a teacher effect on a strengths intervention; they demonstrate that the attitude of the teacher working with students to implement a strengths programme can contribute to student outcomes. How receptive teachers were to a strengths approach influenced their student outcomes, and therefore the effectiveness of a strengths programme, in their classroom. These results are consistent with the finding from Cox (2006), which demonstrated that participant outcomes were enhanced only when therapists endorsed the strengths orientation. Teacher strengths orientation was enhanced overall in this study and contributed positively to student outcomes. The corollary of this finding however is that if a teacher’s attitude towards strengths was negative or deteriorated during a strengths programme, it is likely to have a detrimental effect on the programme’s effectiveness for students.

The strengths spotting scale which was used to assess strengths orientation includes five domains of strengths spotting: ability to recognise strengths in others; the emotional response of the strengths spotter to the activity; their motivation for doing it; the application of the information gained, in other words, what is done with the strengths knowledge; and lastly, the frequency of strengths spotting (Linley, 2010). As such, this scale provides broad coverage of attitudes and behaviours related to strengths. It could be possible for a person to increase their strength orientation ability but not alter their use of that ability, thereby having little or no change in influence on those around them. Teacher changes in strengths orientation scores among the intervention group occurred consistently across each of the five sub-scales with the largest changes in frequency and application. This suggests that teachers’ strengths spotting behaviours had changed in addition to their attitudes, and may explain why these changes contributed to student outcomes at follow-up.

The changes in teacher well-being and strengths use, which were slightly negative for the teacher group overall, do not appear to have influenced student outcomes. In regression
analysis, neither factor was a significant predictor of student outcomes. One possible explanation for this is that teachers as professionals do not let their personal well-being impinge on their teaching and therefore a slight drop in teacher well-being had no impact on student outcomes. Strengths research suggests that strengths use at work is associated with engagement and job satisfaction (Clifton & Harter, 2003; Hodges & Clifton, 2004). However, this intervention asked teachers to support student strengths development, rather than their own, and suggests that change in strengths use did not naturally occur as a by-product of focusing on strengths with their students. As very little change in teacher strengths use occurred overall, it is not surprising that this did not have a significant influence on student outcomes. Further research with a larger sample would be required to determine first, if a strengths intervention can in fact augment teacher well-being or strengths use, and secondly, if significant changes in either of those variables would in fact, influence student outcomes.

**Comparison of High and Low Strengths Match Groups**

The results for the high and low strengths-match groups failed to support the hypothesis that students whose strengths were highly valued by their teachers would score significantly higher on measures of engagement, positive affect, and relatedness than students whose strengths were least valued by their teachers. However, the extremely small sample size means that these results are far from conclusive. Further investigation in a larger sample is required to determine if teacher’s valuing of strengths will influence student outcomes following a strengths intervention. The range of participant results in the groups underscore the possibility that strengths interventions may not be equally effective for all participants, and raise questions about potential causes of differential effects for participants.
Study Limitations and Future Research

The small sample group of teachers in this study limited its power. A larger study sample could more effectively examine the effects of leading a classroom strengths programme on teachers’ well-being, strengths use, and strengths orientation, and the influence of these teacher variables on student outcomes. This study was based solely on student and teacher self-report surveys. Future research could include observations of students strengths use and of teachers’ strengths spotting practices to compare with and validate the self-report measures.

A further limitation of this study is that it did not ask teachers if their strengths value ranking had changed from pre-test to follow-up, nor was it able to gather more nuanced information on how the teachers valued the range of strengths present in their classes. Whether or not teachers actually comment more on their most-valued rather than their least-valued strengths is an empirical question that could be studied. This type of research is time-consuming and difficult but ultimately may allow us to better understand why or how strengths interventions are more effective for some participants than for others. Future research could also examine the differences in participants who benefit most and least from a strengths intervention.

No assessment was made of teacher effectiveness in this study and due to the small number of control group classes, the possibility cannot be discounted that differences were due to a teacher effect. In a small teacher sample, such as the control group in this study, one very effective or ineffective teacher could have a strong influence on the group's scores. A larger sample with an equal number of randomly assigned intervention and control classes would be necessary to demonstrate that the effects of a strengths programme were clearly not a teacher effect and could be attributed to the programme.
Strengths of This Study

This is the first known study to assess strengths programme effects on teacher outcomes and the influence of teacher attitudes to strengths on student outcomes. Teachers are the single most important delivery mechanism for strengths programmes in schools. It is important to understand the extent to which they may moderate or amplify the effectiveness of such programmes for their students. It is also the first study of a strengths intervention to examine the potential for strengths interventions to produce differential effects for particular groups of participants.

Practical Implications of This Study

This study demonstrated that teachers’ attitudes towards strengths, including how motivated they are to identify strengths in others, contributed to the effectiveness of the programme for students. Teachers are likely to need training and support to understand the potential benefits of a strengths programme in their classroom, and how they can influence its effectiveness. Teacher training should include familiarity with all the strengths and support to identify the strengths of all their students. Learning the skills of strengths spotting and expanding the range of strengths a teacher habitually notices in the classroom are also skills that could be included in teacher training. Teachers did not report well-being changes as a result of participating in their students’ strengths programme. Teachers may need to undertake a personal strengths programme to gain the benefits such a programme may afford them. Such programmes could support teacher well-being, and build teacher commitment and support for student programmes.

Conclusion

Research to date has examined the effects of strengths interventions in schools on the student recipients of those programmes. The results of this study suggest that it is also important to examine the effects of these programmes on those helping deliver them. This
study examined the effectiveness of a strengths intervention for students. It also, however, had other goals, namely, to assess the influence of teacher strengths orientation and well-being on a strengths intervention and to examine the influence of teacher strengths orientation and well-being on student outcomes. These goals were very ambitious for the modest scale of this study, nonetheless, some useful preliminary evidence has been gathered.

Although the number of teachers involved in this study was too small to reliably study the effect of participation in the programme on teacher well-being, strengths use, and strengths orientation, teachers who participated did report significantly greater changes in strengths orientation from pre-test to post-test. This finding is supported by teachers’ reports that the programme was relevant and useful in their teaching and that they planned to continue using programme elements in their teaching beyond the study period (see Programme Acceptability and Engagement section, Chapter 6).

Most importantly, study findings demonstrated that changes in teacher strengths orientation influenced student positive affect, engagement, relatedness and modified class climate. This demonstrates that strengths are not developed in isolation; individuals and groups constitute contextual factors that can influence a strengths intervention’s effectiveness for participants. It suggests that a teacher’s receptivity to a strengths approach and their ability to implement it will influence the effectiveness of a strengths programme for the students in their class. Moreover, it is posited that a school intending to implement a strengths programme would do well to pay as much attention to its teachers’ attitudes towards strengths as to those of their students. Asking teachers who do not find the strengths approach useful or motivating to use it in their classes is less likely to support intervention effectiveness for their students.
CHAPTER 8: Qualitative Study of the Student and Teacher Experience of Identifying and Using Strengths.

Introduction

Numerous studies have been conducted on the effects of strength interventions on well-being and achievement (see review in Chapter 3), however, research examining the participant experience of identifying and using their strengths or on participating in a specific and comprehensive strengths programme has not been undertaken to date. For example, it is not clear from previous research whether or not participants found the process of identifying strengths valuable, and to what extent they continued to use strengths after completion of a strengths intervention. Although previous research with adults has indicated that more frequent strengths use was associated with greater well-being benefits (Seligman, et al., 2005), prior research has not examined if this was true for younger students of primary or intermediate school age, or if students were aware of or planned their strengths use in the same way as adults.

The primary objective of the present qualitative study was to gather information about the student and teacher experience of participating in the strengths programme. Specifically, the student experience of learning about strengths, using strengths, noticing strengths in others, and the teachers’ view of Awesome Us and its effect on their class. It was envisaged that this information would enable the development of more appropriately tailored and effective intervention strategies and strengths programmes for young people. The qualitative data also provide another perspective to supplement the quantitative results.
CHAPTER 8: Qualitative Study of Student and Teacher Experience

Methodology and Methods

A qualitative research design using individual interviews with students and teachers was employed. The methodology chosen for the study was the general inductive approach (Thomas, 2006). This approach was considered appropriate as it allows themes to be derived from the data, rather than imposing an analytical structure. The lack of previous research on this topic precluded the development of a priori theory or hypotheses on which to base an analytical structure (Thomas, 2006).

Participants

Participants were students and their teachers who had previously taken part in the Awesome Us strengths programme. Demographic information about students and teachers is set out in chapter 4 of this thesis. Ten students and six teachers participated in the interview process. A teacher from each classroom that participated in the Awesome Us programme was invited to be interviewed.

Data Collection Approach

Data collection was conducted through in-depth, semi-structured individual interviews lasting one hour. A purposive sampling technique was used as it was considered important for the study to interview both students who had the largest and smallest well-being gains following the strength programme, and to interview a balance of girls and boys (Marshall, 1996). It was anticipated that analysis of those who gained most and least from the programme might reveal reasons for their different results. A sample size of 10 students was decided on for this study. This was considered adequate because students had previously demonstrated a good comprehension of the topic, and because the scope of the interview was restricted to personal experience on which each student was competent to answer (Marshall, 1996). Preliminary focus groups with six randomly selected students from each participating class were conducted with other Awesome Us participants following the programme, to test
understanding of the topics covered and to assist with question development for this study. Data from these groups, not analysed as part of this study, demonstrated that students’ topic comprehension and ability to respond to questions were good. Five students were selected at random from each of the groups of students who reported the highest and lowest well-being gains following the strengths programme (as measured by PANAS scores or life satisfaction scores). Students with a range of academic abilities (as assessed by their teachers and the student researcher who had worked with them) were selected, however, a number of students with behavioural or emotional problems were excluded due to potential difficulties in participating.

**Procedure**

Ethical approval was received from the Ethics Committee of the University of Otago (Approval No. 10/179). Teachers who consented, and students who consented and returned a parental consent form, were included in the study. One student from the *low well-being gains group* declined to participate in the interview and subsequently another student was selected from the same group. A total of five girls and five boys took part in one-hour individual interviews. As no new topics or themes were presented in the last two interviews, it was considered that saturation point may have been reached after completion of eight interviews (Bowen, 2008). However, it is noted that this sample did not attempt to be fully representative and does not include issues particular to students with significant behavioural and emotional difficulties.

To stimulate discussion and maintain student interest, the interview included activities and projective techniques such as using strengths cards and placing stickers representing different topics (e.g., family/home, sport, school, strengths, and friends) on a map representing the student’s life. Students were asked what they had felt *more of* and *less of* since the strengths programme, they mapped their ability to cope with challenges before and
after the programme onto a diagram, and discussed whether they used strengths more for
good times or challenging times. They were asked how they would describe strengths to a
five or six year old and to indicate on a diagram where strengths, family, school, friends, and
sport fitted in their daily life. Students were asked to describe a time when they had noticed
strengths use in themselves and in others, and when others had noticed a strength in them.
They discussed how it felt to notice strengths, how often they thought about or noticed
strengths, and who noticed strengths in them. They were asked what it was like to learn
about their strengths, and what difference, if any, this had made to the student and their
classmates. Students named the strengths they had used most in the previous week and
discussed these in detail, including the domains where they typically used these strengths, if
they noticed using the strength at the time, and what made it easier or harder to use the
strengths in some of the domains. Lastly, students were asked to discuss what they found
best and worst about strengths. All interviews were videotaped and transcribed verbatim.

Each teacher who participated in the strengths programme was interviewed following
the completion of the study. Semi-structured interviews were used to discuss the teacher’s
view of the strengths programme and its impact on their class. Teachers were asked about
their experience of participating in the strengths programme, if the approach was new to
them, and if they believed it had been worthwhile or not for their class. They were asked if
they had completed Awesome Us activities in their classes between programme sessions, if
they would incorporate any aspects of the programme into their teaching, and what
suggestions they would make to improve the programme for their classroom. Teachers were
asked about the strengths that were mentioned most and least in their classes, the reasons for
this, and the strengths they found easiest to notice in students. They were asked if they
noticed strengths more frequently since the strengths programme, and if so, which strengths
and in what situations. Teachers discussed any changes they had observed in their teaching,
in the class as a group, and in any individual students since the programme. Teachers were
asked to consider which students had benefitted most and least from the programme, and if
they were aware of any adverse effects for any students. Finally, they were asked about the
school’s values, how often they were referred to in class, and how closely or not school
values were aligned to the strengths in the classification used in Awesome Us.

Data Coding and Analysis

Interview transcripts and activity outputs were analysed using the General Inductive
Approach to identify emerging themes (Thomas, 2006). After three close readings of the
transcripts the primary researcher developed the coding categories for the data (Elo &
Kyngäs, 2008; Thomas, 2006). Following Thomas’ recommendations to assess the clarity of
the categories that had been developed, a second rater reviewed the categories and some
coded text, and then assigned a section of the coded text to the categories. The second rater
was a psychology graduate and a qualified teacher familiar with this research but not
employed by any of the participating schools. Suggested modification of the coding structure
by the second rater was discussed until consensus was reached and the coding structure was
confirmed with minor modifications (Elo & Kyngäs, 2008). Coding initially identified 33
categories for the student data, which were subsequently organised into a series of
hierarchical codes, resulting in four main themes which were judged to best represent the
data. Eleven sub-themes were initially identified from the teacher data. These were
subsequently grouped into three themes which best described the data. A further check on
coding consistency was conducted by the second rater who was provided with the coding
structure, category descriptions, and randomly selected clean transcripts (Thomas, 2006) for
30% of both the student and the teacher transcripts, and rated them using the agreed coding
structure (Barbour, 2001). Coding consistency between the two raters was 90% for the
student sample and 93% for the teacher sample. In addition to assessing inter-rater reliability,
other approaches were adopted to assess validity (Pope, Ziebland, & Mays, 2000; Thomas, 2006). Student and teacher interviews were compared for consistency of responses from the same classroom (for example, regarding how often strengths were mentioned by the teacher or students in the class) and data from the qualitative study were compared to findings from the quantitative analysis described in Chapters 6 and 7. Student transcripts were also analysed to examine any gender differences or differences between those students with high and low well-being gains.

Results

Themes identified from the data are presented first for students, and then teachers. Students from the low well-being gains group were assigned numbers S1 through S5, and those from the high well-being gains group numbers S6 through S10. Teachers were assigned number T1 to T6. These numbers are used to indicate authorship of the quotes cited below.

Student Themes

Four student themes were identified from the data. These were: owning and valuing, automatic and unconscious strengths use, noticing and being noticed, and understanding and interpreting. The owning and valuing theme described the ability of students to define strengths and their sense of ownership of at least some strengths. Students reported strengths were a valued personal resource which they could draw on. The second theme reflected the perception that strengths use was automatic and unconscious, with awareness of strengths use occurring after the fact, if at all. The noticing and being noticed theme described the phenomenon whereby having strengths noticed, and noticing strengths in others or the self was regarded as a positive experience, but was not always easy to achieve. The final theme of understanding and interpreting described the range of strengths understanding observed
by teachers in their students, and the different ways in which students interpreted both their own strengths use, and strengths comments by others.

**Student Theme 1: Owning and valuing strengths.**

*Sub-theme 1.1 Defining and owning strengths.* Every student was able to define strengths, demonstrating a working or operational understanding of the construct. The common elements of these definitions were that strengths were things an individual does and enjoys doing or is good at. They were resources that were internal to the person and available for use at any time.

I would say strengths are like things that you do and what you are good at.

I’d probably say – everybody has them. And that’s all… they are fun and they are enjoyable... You can use them anytime and anywhere. (S1)

Even though students may not have remembered the exact number of strengths in the VIA strengths classification, they were clear that everybody has strengths and can use them when and how they like.

That strengths are something that you use like every day… And you can use them whenever you want, however you want…Strengths are something that everybody has and everybody uses. (S4)

Every student who was interviewed identified one to three strengths for which they felt a strong sense of ownership. They were very clear that they possessed and used these strengths frequently. These strengths appeared to be part of the student’s sense of self, and were mentioned many times, corresponding to the notion of core or signature strengths elaborated by Peterson and Seligman (2004).

Humour [because]... it makes other people laugh.
[Interviewer: And how does it make you feel when you make other people laugh?] It makes me feel happy on the inside – Oh I made this person laugh so I’ll wonder how else I can make them laugh. (S7)

**Sub-theme 1.2 Learning about strengths was positive and useful.** The students reported that they enjoyed learning about strengths. They liked having their core strengths recognised and discovering other strengths they didn't know they had. Identifying their strengths enabled most students to view themselves more favourably, and encouraged some students to persevere and use their strengths more often.

It was exciting knowing that I had strengths. More strengths than I thought I did. It means that I am capable of doing more than I do… I can keep on going and try, and not giving up on it. (S6)

A number of students found learning about strengths challenging initially. However, once they grasped the concept of strengths and understood, for the most part, what the 24 strengths of the VIA meant, they found the process useful and enjoyable.

First off, I kinda didn’t get them. But then when we carried on going, I realised what the strengths were and how to use them, and when to use them, and then I started to get them. (S4)

It made me feel more confident because I wasn’t confident about doing this at the start but then I got into it and I got into doing it - and that’s just the main thing, I get to do this. (S2)

Most students viewed learning about their strengths as something useful, either now or for the future.

It felt a little bit amazing because now I know a little bit more [about myself]…That even I didn’t know. There’s some things like… you know which
gender you are. Yeah, but you don’t really know about much…. But when you grow up you have to learn more stuff about yourself like Awesome Us, finding out about your strengths. (S7)

I know more about myself. I know that I can be better at some things. That makes me feel good. That I know I can do things that I never thought I could do… (S9)

Sub-theme 1.3 Strengths are a valued personal resource. Students viewed strengths as a valuable, personal resource they wanted to keep safe, and access and use readily. Students viewed strengths as personal and within them; in many cases more personal and closer to them than school. Some students said that strengths fit into “just about all of” daily life.

They fit right in to everything else because your strengths are as important as everything else. Yeah, they’re just as important. (S2)

[I would keep them in a safe place so I don’t lose them. So I can just go in and pick out a strength and just go into it. (S1)

Students described a range of applications and benefits from using strengths for good times and challenging times. The applications they described went beyond those discussed during the strengths programme, and represented adaptive use of strengths to assist their personal situations. These applications also indicated that many students did think about their strengths outside the strength programme and the classroom. A number of students described feeling better about themselves, having increased self-belief or confidence because they knew they had strengths, or controlling negative self-talk by using their strengths.

Probably just knowing that I do have strengths and I can use them… Just believing in myself and thinking I can do this. (S10)

A student who listed being “less negative” as one of the changes since the strengths programme said this was because “I won’t say bad things about me anymore” and explained
she learned to do this by “using my self-control”. Other students found using their strengths helped them to manage anger and challenging situations, from attempting complex puzzles to a difficult family situation brought about by a recent divorce.

If I am like, so angry and I want to punch someone, I calm myself down by using self-control. (S3)
Cause if I’m getting frustrated and something, I will know in my mind that I have strengths and not to get angry at other people and blame it on them. (S4)

Sub-theme 1.4 The best and worst of strengths. According to students, the best things about strengths were that strengths helped them feel more self-confident, more persistent, and more capable of managing the challenges they faced.

That I get to use them everywhere I go, no one stops me. (S8)
That I can control my stuff. (S3)
The nicest thing about strengths for me would probably be like that some of them make me have fun with them. Like humour. And teamwork cause like, you can make your team mates laugh... (S7)

Strengths also provided some students with a sense of individuation as they realised they can use their strengths to respond in their own personal way to situations. Having a personal inventory of strengths and knowing which strengths were present or absent was described as being helpful to some students.

I know how to use them - I definitely know that they’ll work and know which ones I have, and which ones I don’t, also … most of the time they actually work right. (S5)

For some students a notable positive aspect of the programme was learning more about their classmates. For others it was adopting a strengths focus and the belief that everyone has strengths.
[It’s not a thing that a lot of people share what their strengths are in class. Like say M. says, he really likes gardening. I didn’t know that – you wouldn’t think he does cause he’s a boy who will all day play rugby and stuff like that, and looks quite hard. (S10)

The students’ descriptions of the worst thing about strengths demonstrated their engagement with the strengths in terms of understanding and using them. The most frustrating aspects of strengths for some students were trying to explain them to people, or not being able to access a strength when they deliberately tried to use it. (Both of these topics are discussed in later sections.)

… when I feel like I need to use them and [my strengths] just won’t work. Like when they pop out, and they don’t work right

… I feel like, well they should pop out on their own …and then I feel like trying to pop them out but they just won’t. (S5)

Other students wished they could have all of the strengths but knowing they couldn't, regretted they had not been using the strengths they actually had prior to the programme, or that they did not fully understand all of the strengths in the VIA classification.

[The worst thing about strengths for me is] to know that I haven't been using my strengths, that I hadn't been using them. (S4)
**Student Theme 2: Automatic and unconscious strengths use.** Although the students were able to discuss which strengths they felt ownership of and the ways in which they found strengths useful, when probed, it became clear that students were unaware of strengths use in the actual moment. Only after the event were students able to process their strengths use. Every student during the interview process and the six preliminary focus groups described strengths use as primarily automatic and unconscious; that is, students seldom deliberately choose to use a strength in the moment, and rarely notice that they are using a strength while they are using it. This was summed up by the student who said, “my strengths just come out”.

They come out automatically. I don’t really know if I’m using them or not. (S7)

Not really thinking about them - and doing it - makes it easier. Thinking about them really hard [makes it harder to use strengths], and just trying to do them. (S9)

Students described being absorbed in the task at hand and not noticing their strengths until later on, if at all.

I’d probably do it and then like, later on I’ll realise hey I’ve done one of my strengths. Probably maybe when I’m sitting down eating my tea or in bed. [Interviewer: But when it happens, you’re just doing it?] Yeah. And I won’t even realise [big smile]. I find it quite easy to just use it straight away and then you realise after. (S4)

**Sub-theme 2.1 Awareness of strengths use varies across students.** The extent to which students noticed their strengths use after the fact varied markedly. Some students noticed very little of their strengths use and thought about it rarely, while other students reflected on their strengths use more frequently and may therefore have been more aware of their strengths use in retrospect. Students unaware of their own strengths use were sometimes only made aware of it because friends commented on their strengths use.
It would probably be a 25% chance of noticing them [afterwards]. And like the rest of it I probably wouldn’t notice them and continue. (S7)

Noticing strengths use while actually using the strength was the exception rather than the norm for most students. One student became aware of his strengths use at the end of a sequence of moves in a game. The effect of noticing his strengths in the moment convinced him, not only that he had in fact been using a strength, but also that he must use strengths often without noticing it:

…when I was just about to move the last one I noticed I’d actually used it [strengths of critical thinking or strategy] just before. [I realised t]hat I was using strategy through the whole thing… but then if I just think about that I was using a strength right then, then mainly in everything I must be using strengths without noticing it. (S5)

Another student noticed she was using a strength when her decision differed from those of her peers.

I notice when I’m playing out with my friends and M. comes over and then she wants to join in and my friends say “No”, but I say “Yes”. I’m using fairness, and leadership ‘cos I’m leading her around when I’m playing with her. (S2)

**Sub-theme 2.2 Deliberate strengths use is not always successful.** Most students described occasions where they explicitly or deliberately tried to use strengths, with mixed results. One student drew a pie chart to represent her strengths use with approximately 70% of strengths use unplanned, and of the remaining 30% explicit strengths use, only half was successful. The students described feeling very frustrated by their unsuccessful attempts to use strengths, with most indicating that they were more successful when they used their strengths automatically and were happy to rely on this approach.
It’s nice to remember that I have them, so I can use them more. When I try to use them they don’t always work, but when I don’t think about them they’re working. (S6)

Sometimes it stuffs up. [Like in] art… when I’m trying real hard to do art it doesn’t normally work. (S10)

Some deliberate strengths use did work; however, it required in the moment awareness of one's thoughts and behaviour and the self-control to make a deliberate choice. Only one student displayed this level of awareness.

I was on the trampoline and then I got off to do something, and then I came back and my brother and sister and friend were on it, and they said I had to wait until they finished what they were doing. I thought about love, and then I just sat there and listened to them rather than get on and just push them off and be mean. (S6)

**Sub-theme 2.3 Low awareness of strengths use in goal pursuit.** Using strengths to pursue personally meaningful goals was one of the strategies of the Awesome Us strengths programme. However, the automatic and unconscious use of strengths had implications for using strengths to pursue goals. Although it was encouraging to know they had strengths that might assist them with goals, most students did not think about their strengths while they were actively pursuing goals. Some students’ considered their strengths as resources that could help pursue a goal but this was either at the planning stage or as a morale booster.

So you might think when you’re planning a goal … it will be really helpful if I use my kindness, or I use my love of learning… But then when the day happens you just do it. (S4)
Student Theme 3: Noticing and being noticed - it just makes my hopes rise.

Sub-theme 3.1 Noticing strengths in self. All the students interviewed enjoyed noticing strengths in themselves. They described feeling happy with themselves, feeling special, or feeling encouraged to continue using their strength or use it more after they noticed it. Even describing noticing their strengths caused some students to smile broadly.

It was when I was at my Auntie’s house and I had to keep on doing things and I got over it but then I thought about persistence and I didn’t give up on doing it. It [noticing my strengths use] gave me a little bit of a boost to do it [the job], and not really worry about it. (S6)

One student who reported being the victim of bullying in class and had limited family support, described feeling more hopeful when he noticed his strengths.

It really felt quite good. Just makes my hopes rise and stuff like that. (S5)

Sub-theme 3.2 Having one’s strengths noticed. Almost all students appreciated when other people noticed their strengths; having their strengths noticed made them feel special, and for some students, encouraged a reciprocal noticing of the observer’s strengths.

I feel really special and... like I’m going to say something nice back. I feel quite good and like I’m going to give them a hug and that. And I feel like I want to give them a kiss but I can’t. My friends I can’t, but my mum and T [sister] I can. (S2)

Students’ depth of understanding of strengths varied from basic and literal to a deep and applied understanding, as discussed shortly. However, all students, including those with a basic understanding of strengths, appreciated having their strengths noticed. One such student said it made him feel “excited and happy”.

[I would prefer t]hem noticing strengths in me. Cause – like – it just makes me happy and it makes me excited. I have an extra strength in my life. (S1)
**Sub-theme 3.3 Noticing strengths in others.** Students described noticing strengths in their friends and also appreciating being the beneficiary of other student's strengths such as kindness.

...one of my friends asked me if I wanted to play with them and we played together and she was really kind to me. [I said t]hank you for being really kind to me. [It felt r]eally good [to say that]. (S4)

For some students acknowledging a strength in someone else felt as good as having their own strengths noticed. They described feeling helpful to the person and feeling good about what they had done.

I said, “good job M.” and he said, “at what?” “Using your strengths”, and he said, “no I wasn't”. “Well you must not have noticed it then”. He just went, “ohh” at first and then I said, “so mainly you can even use strengths without noticing them” - he went, “well then, I definitely know how to use some of the strengths”, “at least now I know how to use one strength”. [I f]elt quite good inside because I was saying good work to someone. Mainly trying to like, put their hopes up high…

(S5)

One student explained strengths to her father and told him she noticed love, leadership, and persistence in him.

..the first time I told him he said he had no idea what it was and then …he was like “Oh, thanks for letting me learn something new today”. And then the next time he had forgotten all about it…he said “thanks for reminding me”… I felt like I was helping him by telling him what he was doing and how to understand what it is. [It felt] good. (S6)

**Sub-theme 3.4 Who notices students’ strengths?** There was a wide variation in both the number of people who noticed students’ strengths, and the roles they played in their lives.
Even allowing for differences in awareness and reporting, it was clear that some students experienced more positive attention than others in relation to their strengths. For some, strengths were noticed by self only, for others it was friends and family but not at school, while others felt their entire class was capable of noticing their strengths.

It would probably just be me, because no one else would probably say so. (S7)

Yes, most people. Basically the whole class. (S1)

No students spontaneously mentioned their teachers when asked who noticed their strengths, although when asked directly, seven out of ten students reported that teachers did notice their strengths. The remaining three believed their teachers never or rarely noticed their strengths, and some were of the view that their strengths were never noticed at school.

They’ll probably just say “good job [name]” or something like that, if I’ve done something good. (S7)

When asked if her teachers would notice strengths, one student’s reply suggested that she did not view strengths spotting as part of the teacher's role.

No, not really. They just do their job and teach really. (S2)

A number of students reported that their friends were the only ones who noticed strengths in them, and that parents and siblings never noticed strengths.

Like, Mum just never has the time, she’s just like, “sit down and have a chat with me”, cause she always does… washing dishes and then just sits down watches TV and watches “My Kitchen Rules”. (S5)

One proactive student educated her family about strengths from an early stage so that they would be able to notice her strengths.

My Mum and my sister… notice that I’m being really kind and caring. They say…They don’t say anything really, they just say I’m using my strengths. I told them [about the strengths] the first day I came here. (S2)
When asked if they would prefer to have strengths noticed by a peer or a teacher, students could see benefits for their learning if teachers were able to notice their strengths; if a teacher was more familiar with their strengths they could give them more work that they enjoyed.

To get to know me better. (S3)

Cause like, then like, they see good potential in me. Knowing that I can actually do things. (S5)

However, some students said they would prefer to have their strengths noticed by a peer because this could initiate a reciprocal cycle of strengths spotting in each other.

Someone in my class if they were like a really good friend. Cause then I’d go “Oh thanks” and then if I was seeing them use it [strengths], yes I’d probably tell them. (S7)

Sub-theme 3.5 Commenting on strengths can be difficult. Despite the fact that students enjoyed having their own strengths noticed, and noticing the strengths of others, it became clear that commenting on them was not always easy. Half of the students interviewed said they would not feel comfortable commenting on strengths to anyone. Four of the students said they would be comfortable noticing strengths in friends or family, but not in other classmates. The reasons given for this reluctance included discomfort at doing something out of the ordinary, not knowing how to express a comment, fear of interrupting somebody mid-task, or of being incorrect in their observations.

They might think it is weird. [And they might say], “Why do you say that?”

[Noticing each other’s strengths in class was not weird] ‘cos it was our topic. (S9)

The core concern shared by students was one of saying something that was not normally said in their classroom. One student explained that she would make a strengths comment for
kindness, bravery, or love, because these words were easy to say. Not knowing how to express a comment was the main obstacle to making strengths comment.

Probably like, I wouldn’t know how to say it, or something like, most likely, I wouldn’t know how to say it. (S10)

**Student Theme 4: Understanding and interpreting.**

**Sub-theme 4.1 A range of understanding.** How students thought about and applied strengths varied widely, ranging from a basic to a sophisticated understanding of strengths. Progression along the spectrum of understanding was not even; some students displayed a mix of basic and sophisticated understanding, depending on the topic being discussed.

**Sub-theme 4.1.1 A basic understanding of strengths.** The basic understanding of strengths was characterised by categorical or black and white labelling of strengths use, a literal interpretation of strengths and how strengths are used in different domains, and often, misunderstandings or misinterpretations of what the strengths mean. For students that used black-and-white labelling, strengths use was very clearly allocated to certain places or times in their life.

[Interviewer: how come you don’t use hope at home?] Cause I don’t have anything to be hopeful about…[b]ecause I’m usually just fighting with my sister or watching TV, and I don’t need hope for that. (S2)

Strengths were interpreted very literally by some of the students, sometimes resulting in misunderstanding and misinterpretation.

[Interviewer: are there any strengths that make no sense to you at all?] …since I’m eleven I have to have this injection and I don’t really want to do it. Because I don’t really like needles. [Interviewer: what does that have to do with open mindedness?] Where it says being open to different people and ideas, like the idea, like of me
having a needle. [Interviewer: and you don't want to be open to that idea?] Yeah.

(S7)

Some of these students focused on a single strength such as physical strength/energy/playing games and their understanding or use of strengths relied upon this strength. During the focus groups conducted to identify topics for the interview process, a pattern emerged where some students who demonstrated a basic understanding, in particular boys, focused heavily on the strengths of bravery and persistence.

[I use strengths always when I’m at the skate park and stuff. Cause my strength is skateboarding. (S1)

[Interviewer: Which ones do you remind yourself of (before a challenging situation)?] Strength and bravery. (S9)

*Sub-theme 4.1.2  A sophisticated understanding of strengths*. The students who displayed a sophisticated understanding of strengths typically demonstrated greater self-awareness than students with a basic understanding and applied strengths to deal with their own life challenges.

Sometimes I try to be nice to my brother and sisters but then they keep being mean back so it gets real frustrating. And when you’re trying to do a job and then you get told to do another one. And you want to do one but you have to do the other one. [And when I feel frustrated] I scream and run to my room. (S6)

These students provided examples of strengths use which demonstrated personal understanding of the strength, beyond the explanations or examples provided in the classroom.

[Interviewer: what do you feel most grateful for?] Having a life and that… Like um that I’m actually able to experience what this life would actually be like. (S5)
Two students described using the strength of appreciation of beauty.

[What I love most about beauty is] that there’s all different colours [in blossom trees]. And they’re all different sizes… some are white and some are pink… it feels good to know that there’s something beautiful there. [Noticing something beautiful changes things...] from being angry and then you see something really beautiful, and then you know that you’ve changed to being happy. (S4)

Students with a sophisticated understanding of strengths were also more likely to display metacognition about strengths, considering what was most important about using strengths, and what was lacking in the strength classification or problematic about its use.

I notice what really matters in the strengths. And what matters the most is you using them. And that you have them. (S2)

Students with a sophisticated understanding of strengths typically acknowledged the possibility that a number of strengths could be used in a particular situation and were able to explain their choice of strength in a given situation.

[I use kindness at school cause I’m being kind and helping my friends out if they get hurt. And at home I’m being kind because I’m like, letting my sister play with my stuff and at sport I’m being kind because I try not to barge into people and with friends I’ll be kind by like just being a friend. (S7)

**Sub-theme 4.2 Interpreting strengths use and comments.** It is to be expected that there is variation in the extent to which students use their own strengths and have those strengths commented on. However, it became evident that differences also existed in the way in which these were interpreted. Some students were very specific about the places where they did or did not use strengths, while others displayed a more global orientation, saying they used strengths “everywhere”. Likewise, some students did not consider their strengths
had been commented on unless the specific language of the VIA classification was used whereas others interpreted any positive comment as an acknowledgement of their strengths. This pattern of interpretation was not always consistent, even within students. One student displayed a global style for parents’ comments and a specific interpretation style for friends’ comments, while another student reversed that pattern, displaying a specific style for parents, and a global style for her own strengths use.

**Sub-theme 4.2.1 Specific strengths interpretations.** Students described specific areas or times where they would use certain strengths and linked specific strengths use to certain situations.

Because, like, if I didn’t use enthusiasm there, I could just use love instead of the enthusiasm cause, I don’t have much enthusiasm at home but I have love at home. I don’t have self-control at sport, cause sports is kind of letting yourself go and go for it. And I have persistence in it instead of self-control. (S6)

A number of students commented that their family were unable to comment on strengths because they didn't know the strengths language. One student acknowledged that her family did notice positive behaviours in her but was not happy that specific strengths use was not acknowledged.

Um, well, that’s it, ‘cos my brother and Mum don’t know about them.

[Interviewer: Do they ever notice you using strengths and they say it without even knowing what it is?] Yeah… when I say something to my brother, he’ll say something nice back to me and he notices. What he’ll say is you’re being really kind today. And he doesn’t know what strengths are. (S4)

Another student did not regard positive comments from her friends about her artwork as strengths comments, because they did not use the strengths language.
[Interviewer: Who else notices strengths – what would your friends say?] Probably not. They’d probably, they’d say like, if they saw my arts stuff, ‘oh that’s real great’ or um or you’re great, or if I gave it [art stuff] to someone they’d say “that’s kind” or something like that. (S10)

Sub-theme 4.2.2 Global strengths interpretations. Some students were of the view that they used their strengths everywhere and described their strengths use globally, although when prompted were also able to provide specific detailed examples of strengths use.

[I use my strengths] everywhere - use it to try not to get into trouble. (S3)
I notice my strengths every day because I use them every day. (S2)

For some students, any positive comment made to them could be interpreted as an acknowledgement of their strengths. They did not seem to require the person commenting to use the VIA language, nor even on occasion, to comment specifically on their actions.

…well I’m not the biggest fan of trying new foods. I’m a person who will say “Ooh that’s gross”, and then try it and “oh this is yum”. Probably like if I do try something, Mum or Dad will say, “that’s good of you”, or “nice for trying”. (S10)
He says – he’s like – “you’re really good at that”, and stuff. He notices that I’m a good sprinter and stuff, and runner. (S1)

One student was convinced that his strengths were noticed by all of his classmates even though when probed, he indicated that none of them actually comment on his strengths.

Teacher Themes

The strengths programme was described by teachers as a positive experience for the students, whom they observed to be more enthusiastic and engaged with the programme than is usual with other class content. The three themes that emerged from the teacher data were
noticing changes in students, class and self, adapting and applying strengths, and concerns about the strengths approach.

Teacher Theme 1: Noticing changes in students, class, and self.

Teacher Sub-theme 1.1 Changes in the class. Most teachers described positive changes in their classes, including students being more open and willing to participate in class, particularly where strengths were being discussed.

I think the positive change of behaviour with them has been that they’re more willing to speak out. They’re very aware of who’s shown them [the character strengths] and who hasn’t, and students who would normally be very quiet have spoken up. (T4)

They described students from their class as being more accepting of students whose differences had previously led to them being isolated or teased.

I think one of the reasons why A. is probably being a bit more accepted now, is because people are being able to identify her strengths...[and] that’s the same with B. (T2)

Teachers described their classes as behaving in a more cohesive manner, rather than functioning in small cliques. Instances of students in classes displaying a caring or protective attitude toward less able students were also mentioned.

… they seemed more open… I could say they are more aware of the social and emotional needs of others – in recognising the strengths in others. I’m not just saying that lightly, I think I’ve probably observed that as a generalisation. (T6)

Teacher Sub-theme 1.2 Changes in students. Teachers reported that the children who appeared to have benefited most from the strengths programme included the more reserved, less confident, or negative children, and those with low self-esteem or a problematic
home life. Teachers observed that the programme focused attention on the strengths of these children, something that did not frequently occur, and may have given them confidence to speak up in class.

I think B., C. and S. definitely seemed more verbal, more relaxed, more happy, more animated, chatting, talking, contributing… Those three wee guys have just really come out of their shell. (T4)

Students with specific learning difficulties and those with lower academic abilities were able to grasp and apply the constructs of strengths successfully.

I was surprised that G was able to articulate her thoughts as clearly as she did. For a child who struggles with comprehension she actually got the flow of it and she really grasped a number of those strengths… And A. and G. are kids who… sometimes take a while to grasp any new concept. They felt they really understood what a number of those strengths actually really meant. (T2)

A number of teachers observed similar changes in students such as displaying a helping or other-focus, a more positive attitude, improved relationship with the teacher, and setting strength-related goals in the classroom.

they have a better idea of goal setting… not just in the sense of “I want to get 99 out of 100” in a test, but “I want to be more persistent at learning my tables”… so they are using their strengths a bit more in their goals. (T1)

The students whom teachers observed as engaging or benefiting least from the strengths programme included those who lacked empathy or were not comfortable with social contact, had problems concentrating, or had low literacy levels. These students were often those who came from turbulent family backgrounds and faced multiple challenges at school. It was the view of one teacher that a strengths programme delivered in a small group format would be more successful for these students.
they don’t feel comfortable, or the literacy - the language and the way it was delivered - was just too much for them. Sitting still for some of our students for 30 minutes is an issue. (T4)

**Teacher Sub-theme 1.3 Changes in self.** All the teachers described changes in their behaviour as a result of the strengths programme. Changes primarily involved using the strengths language and noticing a broader range of strengths more often in students. Teachers also reported using the strengths approach to problem solve with students, to praise them, and to provide corrective feedback.

... you always saw the kids that were enthusiastic, or the kids that had leadership or were kind and even in some respects, even self-control. But now you think about the curiosity and the creativity, and the spirituality, and the hope type things. You’ve actually given them a name. Sometimes you have those thoughts or feelings but you’ve actually got something to pinpoint on that kid’s actions or thoughts. (T2)

[I]t’s a wonderful way to praise a child. Or, [i]nstead of me saying “sit down”, it’s saying, “Do you really think that you’re showing self-control?” (T3)

A number of teachers described an increased awareness of the importance of noticing strengths in students, and an appreciation that having a strengths language enabled them to talk to their students in a more positive way and to provide more specific praise.

…it’s probably just given me a different way to ... talk to children… to focus on what we are good at and how we can use that to improve in other areas… you know, “you’ve showed me strength in this and this”. Instead of saying “well done, that’s good, good job”. (T1)
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Teacher Theme 2: Adapting and applying strengths. Teachers applied their strengths knowledge creatively in the classroom, coming up with a range of strengths applications. They also adapted the strengths programme to help to address the needs of their students and to suit their own teaching style. They observed that the frequency with which strengths were mentioned in the classroom depended on the class focus, teacher strength priorities, and how well students understood a strength.

Teacher Sub-theme 2.1 Teachers strengths applications. Within three months of their classes taking part in Awesome Us, teachers had applied strengths in a wide variety of ways, demonstrating their perceived relevance and benefits in the classroom. Strengths had been used in religious education, health, oral and written language, social studies, Circle Time (a social and emotional learning practice), and physical education. Teachers also linked the character strengths to other schema familiar to students, such as learning strengths and critical thinking skills.

the whole notion of appreciating peoples’ strengths and maybe acting on the information that you get back and talking to people about it, is very much in line with our religious education programme…curriculum wise, health; [strengths] fitted in nicely with concern for others and their own well-being. Language wise, oral language, but there were opportunities for written language that fitted in nicely. Social studies, you know, growing as a group, communities, attitudes… (T6)

Teachers reported using strengths to help manage classroom relationship conflicts and to praise, correct, and provide specific guidance to students. One teacher even mentioned the strengths displayed by students’ in their school reports.

Teacher Sub-theme 2.2 Adapting Awesome Us for their classes. There was no single style of intervention delivery that teachers preferred. Instead, their knowledge of their...
students informed their suggestions relating to pace, lesson duration, or repetition of the programme. Some teachers planned to repeat activities for students who had not fully appreciated or engaged with them at first, others observed that briefer strengths sessions over a longer time period would suit their students.

I think that programme allows itself to do that, like OK, we’ll do [a particular activity] this time but in a months’ time we might do it again… (T2)

For some classes, teachers said the programme would benefit from being integrated into health or religious education, while for other classes, their teachers would focus on art and practical hands-on activities, or just drip feed the concepts slowly over time.

Because they have concentration problems, because of their social, self-esteem and emotional issues … that really does limit you, it means … you have to be the dripping tap. (T4)

Teachers acknowledged that personal style also influenced how they would integrate strengths information into their teaching. Some teachers found it easy to weave strengths into class discussion on a spontaneous basis, while others preferred to create specific blocks of time or activities where they would focus more explicitly on strengths.

You’ve got to find the moment in in the day… children that get up to share their writing and it’s a fabulous piece of work and they’d just downplay it. You sort of ping on that thing …somebody being very modest… (T3)

**Teacher Sub-theme 2.3 Most and least used strengths.** Not all strengths received equal attention in the classroom. Teacher and school preferences influenced frequency of use, as did perceived relevance to student and classroom challenges, and how well a strengths construct was understood by students. The most frequently used strengths across the participating classes were kindness, friendship, teamwork, honesty, persistence and courage. The reasons for their frequent use included an explicit focus on a strength to address
classroom behavioural problems, or that some strengths were linked to school values, thereby providing the how of implementing the value.

Friendship, persistence, forgiveness, gratitude, and I think we’ve worked a lot on that. Kindness, those [strengths that are] very close to our virtues [school values]. (T3)

The strengths that came up in classroom discussion were often inter-personal strengths that affected others and helped deal with adversity. The teachers observed that students tended to mention only those strengths for which they had clear personal definitions or recognised easily.

Kindness was talked about quite a lot in our class and it’s because children recognise kindness. (T5)

The strengths which teachers reported were mentioned least in the classroom were spirituality, modesty, prudence, wisdom and gratitude. The reasons given for this included that a strength was difficult to explain, that students did not have a clear understanding of it, or that it was not the teacher’s strength and they were not comfortable discussing it.

the only one that really doesn’t come up is spirituality. I think it is only because they’re just not quite clear on what it is. (T3)

**Teacher Theme 3: Teacher concerns about strengths.**

*Teacher Sub-theme 3.1 From superficial to deep understanding.* Teachers identified a range of strengths knowledge among their students, which they described as going from superficial to deep understanding. Students with a deep understanding were able to describe strengths use that reflected individualised application of strengths to personal challenges, and an ability to provide a clear rationale when labelling a strength use.

B. said he showed self-control getting on the stage… to stand up there and speak into the microphone. He said, “…they all visualised self-control as stopping
themselves from being naughty”. He had the self-control to actually do the right thing. (T2)

In contrast, some students, typically younger boys, focused on quick recall of strength names and labelling strengths use, often with little evaluation and with a preference for strengths such as bravery, humour, and persistence.

… You want it to be more than just labels because kids are very good at that. They'll use teacher language like nothing on earth. You want it to be deeper than that … (T5)

I think some of those boys haven’t quite got it completely yet… you know, they always find bravery and humour. (T2)

To enable students to progress towards a deeper understanding of strengths, teachers believed it would be useful to provide follow-up activities, to deliver strengths information in other subjects, to adopt the strengths language across the whole school, and to make it an integral part of teacher communications.

**Teacher Sub-theme 3.2 A non-local, adult-focused package.** One teacher in the study did not support the strengths programme, nor the use of the VIA strengths classification itself. The primary objections to the strengths programme put forward were that the strengths classification was not local to New Zealand, did not consider the cultural strengths or values of New Zealand Maori (indigenous people of New Zealand), was not developed specifically with children in mind, and was not clear as to whether strengths or weaknesses should be targeted.

It feels more American to me… I just think, in terms of New Zealand, how does this sit in our culture? (T5)
CHAPTER 8: Qualitative Study of Student and Teacher Experience

…if I was involved in a positive psychology programme I’d need to know … as a teacher … [i]s it using the strengths that you have been given in abundance or is it developing strengths that you are weak at to make you a better person [?] (T5)

This teacher reported that they "did not promote strengths on a daily basis", by which they meant the specific strengths of the VIA classification. However, they acknowledged the value of recognising strengths in children and hoped that they always did this in their own classroom, although without a strengths classification. This teacher stressed the "need to have agreement across teachers together applying to use it [a strengths programme or classification]", and suggested that the list of strengths be developed by the school and take into account school values, Maori and New Zealand values; and that the strengths included should be developmentally appropriate for children in the target age group.

Discussion

This study explored student and teacher experiences of a classroom strengths programme that taught students to identify and use character strengths. The findings suggest that children as young as 9 to 10 years of age can develop at least a basic understanding of strengths, can identify the strengths they believe they own, and can recognise strengths in others. These results also indicate that learning about one's strengths was considered overall an enjoyable and valuable process for students and teachers alike. For some students identifying their strengths appeared to be associated with an enhanced sense of self-worth or positive self-regard. Although identifying strengths did not produce an enduring change in the well-being of adults who participated in an online strengths intervention (Seligman et al., 2005), the same may not necessarily be true for students who learn about their strengths with their teacher and their peers. Furthermore, strengths interventions and strengths use have
previously been associated with increased self-esteem in youth (Proctor, Maltby, et al., 2011; Proctor, Tsukayama, et al., 2011).

Although strengths use has been assessed in a number of strengths interventions, and the strengths use scale is acknowledged as being a retrospective measure of strengths use, the question of whether or not individuals are aware of strengths use in the moment has not previously been raised (Govindji & Linley, 2007; Proctor, Maltby, et al., 2011). An unexpected finding to emerge from the data was that children in the 9-12 year age group were largely unaware of strengths use in the moment. Furthermore, limited reflection post-strengths use meant that many students had low awareness of their strengths use, even retrospectively. This finding has not previously been observed and needs to be replicated with children and explored with adults. It suggests that children in this age group may benefit from strategies which focus on increasing awareness of strengths use, such as planning and reflection, and having strengths use noticed and commented upon. Awareness of strengths use (pre- or post-use) should be distinguished from deliberate attempts to use strengths in a particular situation, which students reported was often unsuccessful and demoralising. Future strengths programmes for students might include discussion on the difference between awareness and deliberate use of strengths, and how to respond to unsuccessful attempts to use strengths.

Although students’ attitude to and frequency of noticing strengths was not assessed, class teachers reported that learning to use the language of strengths and to spot strengths in self and others in the classroom was associated with certain changes in behaviour consistent with a positive attitude towards strengths. Having one’s strengths noticed by others was regarded favourably by almost all students and qualitative findings from students and teachers suggest that it enhanced relatedness. Despite this, many students were reluctant to comment on others’ strengths due to lack of familiarity with expressing strengths-related
comments and the fact that this behaviour did not represent a classroom norm. These findings suggest that although strengths language was taught to the classes and even used as a common language over several months, this was not sufficient to establish a classroom culture of strengths spotting. Student comments suggest that for this to occur more practice and support or modelling from teachers may be required. The adoption of a whole school strengths approach may also assist in creating a culture in which noticing strengths becomes the norm. In addition, if students knew how much other students enjoyed receiving strengths comments, they could be less fearful of commenting on strengths to others.

In earlier focus groups, student and teacher groups all easily listed the strengths most acknowledged and rewarded in their classes. Teachers in this study corroborated that finding, reporting that some strengths are noticed more in the classroom than others. Findings from both student and teacher interviews concurred that student understanding of strengths ranged from a basic or superficial level to a deeper, or more sophisticated understanding. These differences may be attributed to differences in students’ developmental stages, cognitive abilities, or level of engagement with the programme. Students with higher academic abilities, who were more mature, or who were more interested in strengths may have progressed to a deeper understanding of strengths. However, at times students with specific learning difficulties surprised their teachers with their insight and understanding of some of the strengths, so academic ability did not explain all of the differences in understanding. Limited understanding may also be attributed to the programme not having adequately explained the different strengths or their applications across different domains. Future research with students of different age groups could examine the level of understanding and application of strengths, and assess how this changes as students develop.

While some students interpreted any positive comments as acknowledging their strengths, others regarded only comments using the specific language of the VIA strengths
classification as acknowledging their strengths. This pattern of interpretation is similar to the pervasive dimension of explanatory or attributional style, whereby an individual’s explanation of an event can be restricted to the event or domain at hand (specific) or generalised to other events or life domains (general) (Joiner & Wagner, 1995). A number of students demonstrated different interpretation styles across different domains such as family and school, or even different strengths. How students perceive their use of strengths and how they interpret the comments that others make about their strengths has not previously been studied. Future research could investigate if differences in strengths interpretation style are found in a larger student sample and if they have any implications for the well-being effect of a strengths intervention.

The concerns raised about the strengths programme illustrate the need for teacher “buy-in” or support to implement a strength programme effectively. They also underscore the need for follow-up and sustained use of strengths programmes in order for them to be as effective as possible for a wide range of students. The students who participated in this study were drawn equally from groups of students who reported greatest and least well-being gains. It was hoped that in-depth interviews might reveal distinct patterns between these two groups, however, analysis of the data did not reveal any differences. All the students were able to define and describe strengths, and all reported mostly using strengths automatically. Students in the low well-being gain group were as positive about learning about and using their strengths as those in the high group. The group of students who benefited most and least from the strengths programme included boys and girls; both groups included those with a basic and sophisticated understanding of strengths, and specific and global strengths interpretation styles. Both groups included students who were more and less comfortable commenting on strengths, and who reported their strengths being noticed by few or many people in their lives. This suggests that it was not possible, based on any of these factors, to
predict which students would benefit most from the strengths programme. While it is unfortunate that none of these factors can be used to distinguish the high from the low well-being gain group, it is nonetheless encouraging that this also implies that the strengths programme appears to have been as effective for boys and girls; for students with a basic understanding of strengths and with a specific strengths interpretation style; and for those who felt least supported in their strengths use.

**Study Limitations**

A number of limitations must be acknowledged with this study. This study is qualitative: its primary purpose was to generate rich descriptions of the student and teacher experience of learning about and using strengths. It was conducted with a small sample of students and their teachers and therefore findings are not generalisable to the larger population. The researcher who delivered the Awesome Us strengths programme also acted as the interviewer for the qualitative study and was therefore known to students. The possibility exists that students’ interviews may have included an element of socially desirable responding (Paulhus, 2002). Data from this study may be used to generate future study hypotheses or to assist in the design of subsequent qualitative investigations.

**Study Strengths**

The qualitative study included the views of students and teachers. It also included students who had experienced both high and low changes in well-being following the programme. This study provided the first evidence that not all strengths receive equal attention in the classroom. Given that having their strengths noticed is regarded positively by most students, this differential noticing of strengths may influence the effectiveness of classroom-based strengths programmes for some children. The qualitative study also provided valuable evidence that the strengths programme was well received in schools and produced positive changes in students and class groups. The range of strengths applications
used by teachers within three months of the programme supports the view that the strengths programme was relevant and useful in the classroom and was integrated into the curriculum in a manner appropriate for the classroom context by the teachers.

**Conclusion**

This study provides a new understanding of how young people experience and use strengths. Although students regarded awareness of strengths use and strengths comments as positive, strengths use appeared to be largely automatic and unconscious. Strategies that help raise self-awareness of strengths use may benefit students through an increase in positive feelings associated with awareness of strengths use and an increased likelihood of further strengths use. Strategies that facilitate strengths being noticed by others, such as deliberate strengths spotting, may also increase awareness of strengths use, and in addition, may also enhance feelings of relatedness between the strengths user and the strengths spotter. Findings suggest that noticing strengths in others, the strengths spotting approach encouraged by the Awesome Us programme, enhanced relatedness and class cohesion amongst students and with their teachers. The use of strengths spotting as a strategy to enhance relatedness in the classroom deserves further research attention.
CHAPTER 9: General Discussion

Study Aims, Hypotheses, and Findings

The aim of this study was to investigate a new approach to identifying and developing strengths in children aged 9-12 years, a younger age group than has been investigated in previous published studies. The Awesome Us strengths programme was explicitly designed to be appropriate for and of interest to this age group and involved self-assessment of strengths, interactive activities, and a focus on relationships. An objective of the study was to determine if the Awesome Us programme could influence relatedness, classroom climate, well-being, and engagement, and to assess the impact of contextual factors on intervention effectiveness. The hypotheses of the study were that the strengths intervention would increase participants’ well-being, engagement, relatedness, overall intrinsic need satisfaction and strengths use, and would enhance class climate, when compared to a control group receiving teaching as usual. A second hypothesis was that teacher well-being, and strengths-orientation would increase following the intervention and would contribute to the student outcomes.

Students in the intervention group received the Awesome Us strengths programme while the control group received usual classroom teaching. Students completed pre-test, post-test, and 3-month follow-up online assessments. Results at follow-up showed significant differences between the intervention and control groups on positive affect, classroom engagement, relatedness, modified class climate, overall intrinsic need satisfaction, and strengths use, with the intervention group reporting higher levels of each measure, and providing support for the study hypotheses. Although intrinsic need satisfaction was higher in the intervention group than the control group, changes were found to have occurred primarily in the sub-scale of relatedness, with no enduring changes in competence or
autonomy. Group differences in classroom engagement and class climate were not significant at post-test, but became so by follow-up. Analysis of teacher variables provided some evidence that well-being and strengths orientation may have been enhanced but the small teacher sample number limited any firm conclusions from being drawn. The hypothesis that teacher strengths use would increase following the intervention was not supported. The change in teacher attitudes towards strengths, but not changes in teacher well-being or strengths use, was found to contribute significantly to student outcomes.

**A Strengths Intervention Using Novel Strategies Is Effective With A Primary School-Age Population**

This study demonstrated that a strengths intervention can be effective using novel strategies and self-assessment of strengths. It suggests that the intervention strategies of noticing strengths in self and others, and using strengths to pursue personal goals may be effective in the classroom environment. These findings provide further support for initial evidence that a strengths intervention could influence well-being without explicitly targeting signature or top 5 strengths (Proctor, Tsukayama, et al., 2011). Proctor, Tsukayama, et al.’s finding came from a UK study where students were asked to develop any of their strengths in the exercises and activities provided in a strengths curriculum.

In contrast to prior research (Mitchell et al., 2009; Seligman et al., 2009; Rashid, 2004; Rust et al., 2009), Awesome Us explicitly targeted recognition of strengths in others and dedicated time and activities for students to learn how to recognise each other’s strengths. The strategies used included teaching children to identify strengths in themselves and others, to practice noticing strengths in self and others, and to use strengths to pursue meaningful personal goals. This process supported relationships in that students helped each other identify their strengths and work through activities, and facilitators demonstrated interest in and respect for participants’ strengths. This programme, with a strong relational
focus, influenced modified class climate, relatedness and positive affect, but not life satisfaction. This contrasts with previous strengths research in schools which found effects for life satisfaction but not affect (Proctor, Tsukayama, et al., 2011). Further research will be required to determine if interventions using a particular strategy or process will reliably influence certain outcomes and not influence others. If strength interventions do not influence the same variables when different strategies are adopted, those wishing to implement particular interventions may need to consider using strategies which are specifically adapted to, and are appropriate for the outcomes they wish to achieve. This also raises questions about how one might differentiate between the mechanisms of different intervention strategies and the mechanisms of using strengths per se.

A Broader Range of Outcomes Including Class Climate And Relatedness May Lead To Wider Applications

The Awesome Us strengths programme had positive effects on well-being and engagement, outcomes which had previously been studied in other strengths interventions (Gillham, 2011; Proctor, Tsukayama, et al., 2011; Rashid, 2004; Rust, et al., 2009; Seligman et al., 2005). To date researchers have studied the effects of strengths interventions on individual factors. A meta-analysis of positive interventions found interventions were more effective when delivered individually than in a group setting (Sin & Lyubomirsky, 2009). That finding was based primarily on adult research focusing on well-being outcomes. Where an intervention goal is to enhance relatedness or class climate, clearly group work is important and relevant. This study demonstrated that a strengths intervention can influence group as well as individual factors; namely modified class climate. Qualitative data from teachers and students further supported the quantitative finding that modified class climate was enhanced as a result of the Awesome Us strengths programme.
The broader range of effects produced by strengths interventions mean that they may have wider applications than enhancing well-being. Both the modified class climate and relatedness effects are of interest to schools and to workplaces as they represent the potential for strengths interventions to be used to build group morale and relationships within work units or teams as well as classes. Maintaining students’ sense of relatedness is an on-going challenge for schools as this important predictor of engagement typically deteriorates through intermediate and high school years (Skinner et al., 2008). Relatedness is also regarded as an important facilitator of student trust in teachers and consequent willingness to make the mistakes necessary for learning (J. Hattie, personal communication, July 23, 2012).

Likewise, improvements in class climate are important because they help create a supportive learning environment that promotes effective learning (Fraser, 1989) and may also help reduce the incidence of bullying (Stefanek, Strohmeier, van de Schoot, & Spiel, 2011). Positive class climate has been related to lower victimisation of students in schools, while poor class climate was related to higher levels of bullying (Stefanek et al., 2011). Qualitative evidence from this study indicated that students who participated in Awesome Us were more accepting of classmates who were different or had personal challenges and that teasing of these children lessened or stopped.

Active Ingredients

Although the effects of Awesome Us were as expected, it is nonetheless difficult to determine exactly why or how these effects occurred. Changes observed in relatedness, in positive affect, and in classroom engagement could be attributed to practising strengths spotting, positive changes in self-esteem or self-concept, strengths use being intrinsically fulfilling, or increased understanding and appreciation for classmates. In a recent study, asking participants to recall positive personal memories was used as a positive placebo control in one strengths intervention (Mongrain & Anselmo-Matthews, 2012). This control,
which required participants to access positive information about the self, was found to be as
effective at enhancing well-being as the intervention strategy of asking participants to use
their signature strengths in a new way. Recalling and discussing personal memories of
strengths use may have contributed to the effects reported in this study.

Although strengths spotting was encouraged as part of the intervention, many students
interviewed said they found it challenging or uncomfortable to comment on strengths to their
peers, unless they were close friends. If strengths spotting was not frequently communicated,
it may not have contributed significantly to the result. Students were encouraged to use
strengths to pursue meaningful personal goals and this too could have contributed to
enhanced well-being. Although students reported a moderately high level of goal striving
and goal completion, they described a low awareness of strengths use while actively pursuing
their goals. They provided little detail on their goal pursuit during the qualitative study
interviews. However, as these interviews took place five months after the programme, the
low discussion of goal pursuit may have been more due to the passage of time than lack of
importance.

A more holistic view of other students was made possible through the strengths
programme; one student commented that although she had known her class for six years, she
had learned new things about them during the programme. This increased understanding of
other students may also have facilitated an increased sense of relatedness. Finally, learning
that one has strengths was a positive step for most students; considering oneself to be a
person with strengths, or increased awareness of strengths use may have resulted in enhanced
self-esteem or sense of self-worth. Strengths research has previously found a positive
association between strengths use and self-esteem (Proctor, Maltby, et al., 2011; Wood et al.,
2011) and strengths use has been theorised to be engaging and fulfilling (Seligman, et al.,
2005).
The Classroom Teacher Constitutes an Important Contextual Factor

The present study has demonstrated that the attitude of teachers towards strengths directly contributes to student outcomes, and builds on previous research that demonstrated that patient outcomes were better when their therapist supported the therapeutic modality they were using (Cox, 2006). Aspects of attitude towards strengths include how receptive an individual may be to the concept of strengths and the extent to which they value, notice, or comment on strengths they observed in others (Linley et al., 2010). This has particular relevance for the role of the classroom teacher where a teacher’s strength spotting can be considered as an important contextual or environmental factor. This study provides the first evidence that contextual factors influence the effectiveness of a strength intervention. Programme effectiveness is clearly not just a matter of a dose effect where more strengths use results in greater benefits. The context in which strengths are used, including teacher support for strengths and recognition of strengths in students, can influence the effectiveness of strengths on well-being, engagement and relatedness. This is an important finding which has implications both for training teachers to implement strengths programmes in schools and for how researchers conceptualise strengths learning and development taking place.

Strengths Spotting: Social Recognition of Strengths Use and Intervention Strategy

Strengths spotting, or noticing and commenting on strengths use, was encouraged as an intervention strategy in Awesome Us. Student reports suggest that strengths spotting supported relatedness and encouraged reciprocal prosocial behaviour. As students were often unaware of their own strengths use, strengths spotting by others represented not just a way to build relatedness but also a way to raise awareness of strengths use. However, findings also suggest that there may be difficulties with this strategy; students were sometimes reluctant to comment on others’ strengths if it was not the class norm and teachers reported rarely
noticing or mentioning some strengths in class, including strengths they personally found
difficult to relate to.

Strengths spotting, however, is not just an intervention strategy. Feedback on
strengths use teaches a child whether or not a strength is welcome or acceptable in certain
situations. Many strengths programmes assist children to learn where a particular strength
(behaviour) is appropriate and where it should not be used (e.g., Reivich et al., 2003).
Commenting on strengths use, whether for encouragement or censure, may play a role in
nurturing, or inhibiting, strength development. Given that possibility, a greater understanding
of the influence of strengths spotting and how it is applied in various settings may prove
useful.

Findings from this study indicated that not all strengths are noticed equally in the
classroom. The strengths that teachers in this study mentioned most often in class were those
closely aligned with school values, relevant to the students and class functioning, and those
which the teacher found easy to relate to. This raises the possibility that a classroom-based
strengths intervention may not always support or encourage development of the full range of
strengths or of an individual student’s particular strengths. If a student’s top strengths are not
included in any of the categories described previously they may receive little attention in the
classroom. Less frequent strengths feedback could possibly result in reduced awareness of
strengths use and lost opportunities to enhance relatedness with teacher or peers. According
to the Realise2 strengths categorisation (Linley, 2009), working on strengths which are not
among the owner’s top strengths may result in them developing learned behaviours (i.e.,
skills that are not energising to use), rather than strengths. The effect on individual well-
being of developing learned behaviours at the expense of one’s strengths has not yet been
examined. Further research is required to determine if certain clusters of strengths receive
significantly more classroom attention and if strengths interventions are more effective for students possessing those strengths clusters.

**Implicit Theories of Strengths**

Although a theory of strengths has not been described, each strengths classification and each intervention makes assumptions about strengths which can constitute operational or implicit theories of strengths. As well as teaching a participant about their strengths through an explicit and specific strategy, a strengths intervention conveys information about how strengths work, how they may be developed or not, and what effects one can expect to achieve through their use. The Awesome Us strategy of noticing strengths in each other emphasises the value of relationships and the importance of feeling valued by the significant people in one’s life. The strategy of developing one’s signature strengths emphasises individual satisfaction from using those strengths and personal mastery in their use. An intervention which focuses on identifying and using one’s top 5 or signature strengths may encourage a student to view their signature strengths as unchangeable, but capable of development (i.e., a signature strength could be “improved” but it is not possible to develop a “new” signature strength). In contrast, an intervention which focuses on using all the strengths and how strengths can be a resource to draw on for valued goals, may encourage a view that all strengths can be accessed by any individual irrespective of their top strengths, but may not equip the child with strategies for enhancing any of them. To illustrate this, students in the Awesome Us programme referred to strengths as *being there for me* and *being inside me*, but did not discuss building or developing their strengths. In the absence of a coherent theory of strengths, it may be all the more important to state the assumptions one is making about strengths, the specific desired objectives and outcomes of a strengths intervention, and why the strategies chosen are considered appropriate for the particular intervention. Strengths interventions typically intend to enhance strength development and
well-being, however, unwittingly, they could possibly encourage only those strengths valued
in the proximal environment, or install a fixed view of strengths as unchangeable. The
influence of intervention assumptions and strategies on student beliefs about strengths and
their subsequent strength development deserve further investigation.

**Strengths Use May Not be Reliably Assessed in Children**

Interest in the assessment of strengths use grew due to research findings that strengths use,
rather than strengths ownership, was associated with well-being and strengths use has
subsequently been correlated with subjective well-being and self-esteem (Govindji & Linley,
2007). The Strengths Use scale has validation evidence for use with adults (Wood et al.,
2011), however, as the authors of the scale acknowledge, this is a retrospective measure and
“results are best interpreted as perceived strengths use” (Wood et al., 2011, p.18). Students in
this study reported that strengths use was a largely unconscious and automatic process in this
age group (aged 9-12 years). When used with children, the Strengths Use scale represents a
subjective self-report measure of an automatic and unconscious process. Retrospective
strengths use assessment may reflect the respondent’s awareness of strengths, their
conceptual understanding of strengths, and the extent to which they make global or specific
interpretations of strengths use or comments, as much as it reflects strengths use. These
issues may mean that assessment of strengths use in children should not be relied upon unless
other corroborative assessments, such as 360 degree strengths assessments or observational
studies, can be included to verify results.

**Effect Sizes and Practical Significance**

Strengths interventions have typically produced small to medium sized effects (see
Chapter 3) and this study was no exception (see Chapter 6). It is notable this this study
produced these effect sizes across a range of outcomes and that these effect sizes are
comparable or slightly larger than those produced by another strengths intervention with
school students (Proctor, Tsukayama, et al., 2011). Although two strengths interventions with adults have produced larger effect sizes (Rashid, 2004; Rust et al., 2009), these interventions were not directly comparable to the school-based interventions due to differences in duration, content, or measures. Further research will be required to investigate if strengths interventions for children and youth will typically produce smaller effects than those with adults or if alternative approaches will increase intervention effectiveness for youth.

Although the effect sizes of this study may be categorised as small, there is evidence that they may be of practical significance. Expressed in terms of a general purpose effect size (BESD), participating students reported greater enhancement rates than control group students that ranged from 17 to 20% for outcomes such as relatedness, classroom engagement, and positive affect. These improvements may be regarded as worthwhile changes by teachers and parents. Practical significance of the Awesome Us programme was also supported by the qualitative data from teachers and students, reported in Chapter 8. Teachers and students indicated that they observed changes in the classroom environment and some described specific changes in their own and others’ behaviours. Students also reported feeling more self-confident, persistent, and more capable of managing their challenges.

**Practical Implications for Schools**

The implications of this study’s findings for schools are that strength interventions may be successfully used with children as young as 9 to 10 years of age and may be used to build student-teacher relationships and a more positive modified class climate as well as supporting individual engagement and well-being. A favourable attitude towards strengths on the part of teachers appeared to contribute to the effectiveness of a strengths programme. Training and support for teachers should be considered an important part of implementing a school strengths programme. Such training may benefit from providing a clear rationale and
evidence for adopting a strengths approach, encouraging personal use of strengths, explaining the potential role of strengths spotting in the classroom, and training teachers in this skill.

Student reports that strengths use is largely automatic and unconscious, suggest that school strengths programmes need to consider strategies to increase awareness of strengths, both before and after their use. To raise awareness of strengths use, schools could encourage a focus on strengths for planning (what strengths could assist with the planned goal or task, what has worked in the past) and reflection (what strengths were, or were not used, and to what effect). Encouraging teachers to notice strengths in students, and to include strengths comments in their feedback to them, may raise student awareness of their strengths and also build student-teacher relatedness, assisting engagement and learning.

Teachers noted the range of understanding and interpretation of strengths that was demonstrated by students and tailored their use of strengths in the classroom to respond to these needs. Strengths programmes may benefit from greater consultation with teachers and flexible implementation which allows the teacher to direct the pace and duration of strengths teaching sessions. Teachers are also best placed to integrate strengths teaching into specific aspects of the curriculum to suit students’ learning needs and preferences.

**Limitations of this Study**

An important limitation of this study was one faced by many school-based studies, namely that it was not possible to randomly assign classes to intervention or control. As a result, the findings of this study may not be generalisable to the wider population of students in this age group. Furthermore, the intervention and control groups were of unequal sizes, with a smaller number of classes in the control group. The small number of control group classes means that the effect of a single teacher could have influenced the control group outcomes. Although efforts were made to recruit a larger sample group, problems with
recruitment meant that a smaller number of participants than anticipated finally agreed to participate. The desire of each participating school to have a classroom in the intervention group, even where they could not offer a similar sized classroom to the control group, resulted in an intervention group that was much larger than the control. Furthermore, the sample size achieved was smaller than planned and as a result the study was underpowered to detect small effects, thus increasing the risk of false negative and positive results. This study provides preliminary evidence that the strategies used in this programme can influence a range of outcomes, but a randomised controlled trial over a longer period, with groups of equal size drawn from a larger sample of schools, will be necessary to confirm the programme’s effectiveness.

The primary researcher also acted as the principal facilitator of the Awesome Us programme and the interviewer for the qualitative study. Although the classroom teacher was present in the classroom for Awesome Us, the outcome cannot be considered equivalent to having the teacher deliver the programme in its entirety. Future research should assess the effectiveness of the strategies of Awesome Us when delivered by classroom teachers. Moreover, the students who took part in the qualitative research knew the interviewer as the facilitator of the Awesome Us programme and this could have prompted some socially desirable responding in so far as students may have wanted to please the researcher by responding favourably to questions about the programme. Future qualitative assessment should be conducted by an interviewer familiar with strengths programmes and children of the target age group, but not known to them.

All of the students and teachers in the intervention and control groups were familiar with the concept of strengths and the VIA classification of strengths. Greater differences between groups might possibly have been observed if student and teacher participants did not have any prior strengths knowledge. This study did not include hypotheses about the effect
of strengths programmes on children’s self-concept or self-esteem and so they were not assessed. However, evidence from the qualitative study suggests that changes to self-concept may have occurred, and should be considered in future studies.

Relationship skill training, 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 & Matthews, 2012). The aim of this study was to find an effective way to deliver a strengths programme to children aged 9-12 years. Future research on this programme could 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. Controlling for these factors will assist in understanding the mechanisms involved in a strengths intervention.

Although Awesome Us taught students to notice strengths and invited teachers to practice strengths spotting with students during normal class-time throughout the programme period, it did not explicitly train the teachers to notice strengths, nor did it indicate that strengths spotting could be an important strategy for students. Therefore the programme may not have maximised the strengths spotting taking place in the classroom. In addition, the study did not assess the level of strengths spotting taking place in the classroom, so it is not possible to determine if strengths spotting by teacher or students was responsible for the changes reported. Future research should include training on the practice of strengths spotting and its potential benefits as well as observation of strengths spotting in the classroom by teachers and students.
CHAPTER 9: General Discussion

Future Directions for Research

This study draws attention to the need for further investigation of the influence of contextual factors such as teacher attitudes and behaviours on student outcomes from strengths programmes. The strategy of strengths spotting by both teachers and peers has been associated with enhanced relatedness and positive feeling about the self. Empirical study of which strengths are actually noticed in the classroom and which are not, and the frequency and distribution of those strengths observations across students will add to the understanding of how strengths programmes operate in the classroom and may enhance understanding of intervention mechanisms. Future analysis of the data from this study using alternative analytical approaches, such as multilevel modelling, may provide a more nuanced understanding of group differences, accounting for differences between school and classroom contexts. How students interpreted both their own strengths use and strengths comments by others varied markedly in this study. Further study could investigate if students with a very narrow interpretation of strengths are at risk of benefitting less from a strengths programme than their peers who generalise their ability to use strengths and interpret positive comments broadly as acknowledgement of their strengths. The effectiveness of a strengths programme such as Awesome Us when integrated into the curriculum and delivered by class teachers trained in the strengths approach should be investigated. How the strengths approach can be extended to include caregivers and the home environment was a topic of much interest to participating teachers and school principals. Future research could also investigate effective strategies to work with parents and caregivers of students.

Strengths of this Study

Strengths of this study include the extension of strengths research to a population that has not previously been studied, namely primary school students. Participating students were from low to mid SES environments, and it is of interest that students from this group
benefitted from the strengths programme. The study was conducted in New Zealand, and therefore provides evidence for the effectiveness of strengths interventions to a culture not previously studied in the strengths research literature.

This study provided the first evidence that strategies of strengths spotting and using strengths to pursue personal goals can be effectively used in a strengths intervention. A broad range of outcomes were assessed, providing evidence that strengths interventions can be used to influence group as well as individual outcomes, and that well-being can be increased without accompanying changes in competence or autonomy. This study extended assessment to include contextual factors and included a qualitative study, which together provided evidence that teacher attitudes influence student benefits from an intervention, that not all strengths are noticed equally in the classroom, and that students have low awareness of strengths use as it occurs and may benefit from encouragement to plan for or reflect on it.

The results of this study also have implications for how strengths interventions are considered to influence outcomes. In this study a strengths intervention was associated with sustained changes in relatedness, but not competence or autonomy. Change in competence is therefore an unlikely candidate as the mechanism through which this intervention produced its effects, whereas the relatedness changes suggest that the context in which strengths are used and noticed may also be important.

**Conclusion**

This study strengthens the case for using strengths in schools. It suggests that strengths programmes may have wider applications than have previously been considered. Strengths programmes may help promote positive classroom environments and support development of student-teacher and peer relationships in addition to enhancing individual engagement and well-being. However, findings from this study also suggest that benefits
from these programmes may not flow inevitably from their implementation. Strengths programmes are not a wind-up toy that can be set off with little thought or effort.

This study suggests that strengths programmes will benefit from having clear goals and objectives, and adopting a strengths classification and programme aligned with those goals. Programme effectiveness may be influenced by teacher attitudes and ability to notice strengths in the classroom, so training and support for teachers prior to implementation should be considered important. Although students can be taught about strengths relatively quickly, findings from this study indicate that embedding appropriate, child-friendly strengths language in a classroom and developing a norm of noticing strengths in each other may require a longer-term commitment. Lastly, for children participating in a classroom-based strengths programme to gain relationship, class climate, engagement and well-being benefits, may require more than being encouraged to *use your strengths in new ways*. Children may benefit from having their strengths use commented on by teachers and peers, and being supported and encouraged to plan and reflect on their strengths use.

Although the Awesome Us strengths programme will benefit from further development and evaluation, the concepts and strategies it contains should be of interest to schools. Awesome Us provides practical strategies for teachers to develop relatedness with students and support their engagement with learning. It offers an approach that is suited to school functioning; it is universal rather than targetted, requires only brief teacher training and no infrastructure changes to adopt it, and can be readily integrated into daily classroom activities.
References and Appendices
References


Fraser, B. J. (1982). Assessment of learning environments: Manual for Learning Environment Inventory (LEI) and My Class Inventory (MCI). Third Version.


LIST OF APPENDICES

Appendix A - Strengths Classifications: Categories and Constituent Strengths
Appendix B – Student and Teacher Measures Used in the Awesome Us Study
Appendix C – Ethical Approvals for the Awesome Us Study
Appendix D – Information Sheets and Consent Forms Used in the Awesome Us Study
Appendix E – Awesome Us Feedback Form for Student Pilot Participants
Appendix F – Gender Differences in Student Feedback on Programme Component Difficulty, Interest, and Usefulness
Appendix G – Treatment of Missing Values and Outliers, Assessment of Normality, and Statistical Power Calculation in Analysis of Student Data (Chapter 6)
Appendix H – Treatment of Missing Values and Outliers, and Assessment of Normality in Analysis of Teacher Data (Chapter 7)
Appendix I – Statistics on Regression Model Validity (Chapter 7)
### Appendix A. Strengths Classifications: Categories and Constituent Strengths

<table>
<thead>
<tr>
<th>Classification</th>
<th>Categories: Strengths</th>
<th>Categories: Strengths</th>
<th>Categories: Strengths</th>
<th>Categories: Strengths</th>
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</thead>
<tbody>
<tr>
<td></td>
<td><em>Courage:</em> Bravery, Persistence, Integrity/Authenticity, Zest/Vitality</td>
<td></td>
<td><em>Temperance:</em> Forgiveness, Humility, Prudence, Self-regulation</td>
<td></td>
</tr>
<tr>
<td><strong>StrengthsFinder</strong></td>
<td>Achiever, Activator, Adaptability, Analytical, Arranger, Belief, Command, Communication</td>
<td>Competition, Connectedness, Consistency, Context, Deliberative, Developer, Discipline, Empathy</td>
<td>Focus, Futuristic, Harmony, Ideation, Includer, Individualisation, Input, Intellection, Learner</td>
<td>Maximiser, Positivity, Relator, Responsibility, Restorative, Self-Assurance, Significance, Strategic, Woo (winning others over)</td>
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<tr>
<td>Realise2</td>
<td><strong>Strengths of Being:</strong></td>
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<td>Courage</td>
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<td></td>
<td>Curiosity</td>
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<td>Gratitude</td>
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<td>Humility</td>
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<td></td>
<td>Legacy</td>
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<td></td>
<td>Mission</td>
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<td>Moral Compass</td>
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<td>Personal Responsibility</td>
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<td>Pride</td>
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<td></td>
<td>Self-awareness</td>
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<td></td>
<td>Service</td>
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<tr>
<td></td>
<td>Unconditionality</td>
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<td></td>
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</tbody>
</table>

|  | **Strengths of Communicating:** |
|  | Counterpoint |
|  | Explainer |
|  | Feedback |
|  | Humour |
|  | Listener |
|  | Narrator |
|  | Scribe |
|  | Spotlight |

|  | **Strengths of Relating:** |
|  | Compassion |
|  | Connector |
|  | Emotional Awareness |
|  | Empathic Connection |
|  | Enabler |
|  | Equality |
|  | Esteem Builder |
|  | Personalisation |
|  | Persuasion |
|  | Rapport Builder |
|  | Relationship Deepener |

|  | **Strengths of Motivating:** |
|  | Action |
|  | Adventure |
|  | Bounceback |
|  | Catalyst |
|  | Change Agent |
|  | Competitive |
|  | Drive |
|  | Efficacy |
|  | Growth |
|  | Improver |
|  | Persistence |
|  | Resilience |
|  | Work Ethic |

|  | **Strengths of Thinking:** |
|  | Adherence |
|  | Creativity |
|  | Detail |
|  | Incubator |
|  | Innovation |
|  | Judgement |
|  | Optimism |
|  | Order |
|  | Planful |
|  | Prevention |
|  | Reconfiguration |
|  | Resolver |
|  | Strategic Awareness |
|  | Time Optimizer |
| The Virtues Project | Assertiveness | Caring | Cleanliness | Commitment | Compassion | Confidence | Consideration | Cooperation | Courage | Courtesy | Creativity | Detachment | Determination | Diligence | Enthusiasm | Excellence | Flexibility | Forgiveness | Friendliness | Generosity | Gentleness | Helpfulness | Honesty | Honor | Humility | Idealism | Idealism | Integrity | Joyfulness | Justice | Kindness | Love | Loyalty | Moderation | Modesty | Orderliness | Patience | Peacefulness | Perseverance | Purposefulness | Reliability | Respect | Responsibility | Self-Discipline | Service | Tact | Thankfulness | Tolerance | Trust | Trustworthiness | Truthfulness | Understanding | Unity |
|---------------------|---------------|--------|-------------|------------|------------|------------|--------------|-------------|----------|-----------|------------|------------|-------------|----------|------------|-------------|-------------|-------------|--------------|-------------|-------------|--------------|--------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| The Dependable Strengths Articulation Project | Asks participants to identify and name their strengths. |
Appendix B – Student and Teacher Measures Used in the Awesome Us Study

Student Survey for Awesome Us at Post-Test (April 2011).

This post-test survey included in the Appendix contains the questions used at pre-test, post-test, and follow-up. The pre-test survey did not include question 2 (feedback on the programme), or questions 9 to 14 (relating to personal and friendship goals).

The follow-up survey did not include question 2, but did include questions 9 to 14.

Teacher Survey for Awesome Us at Pre-Test (February 2011)

The pre-test survey questions included in this Appendix were repeated at post-test and follow-up with the exception of question 3 (importance of strengths in the classroom). Additional questions asked at post-test and follow-up are listed immediately after this survey.

Additional Questions in Teacher Survey for Awesome Us at Post-Test (April 2011) and Follow-Up (July 2011)

The post-test survey (April 2011) included a question requesting feedback about the Awesome Us programme. The follow-up survey (July 2011) included a question requesting information about teacher implementation of the programme in their classroom, and intentions for future use.
### Getting Started

Thank you for taking part in Awesome Us and for agreeing to complete this survey. Your answers will help us learn more about how well Awesome Us works for students like you.

It will take about 15-20 minutes depending how fast you go. It's important that you answer all of the questions. As you do the questions, you will see how much progress you are making and how close you are to finishing.

This is a survey, not a test. There are no right or wrong answers. Some kids are very different from one another; each of the children in this survey will be putting down something different. It is important to know what you REALLY think, so please answer all of the questions the way you really feel. No one will be told your answers.

When you have finished the survey click the 'Done' button. You will see a thank you page; please click the 'Done' button on that page to submit the survey.

1. Please enter your name, the name of your school, and your classroom number in the boxes provided below.

<table>
<thead>
<tr>
<th>First Name:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Surname:</td>
<td></td>
</tr>
<tr>
<td>School:</td>
<td></td>
</tr>
<tr>
<td>Room number:</td>
<td></td>
</tr>
</tbody>
</table>

2. We want to know how useful Awesome Us was for you. Click the button next to each statement that best describes how Awesome Us was for you.

<table>
<thead>
<tr>
<th>Statement</th>
<th>None of the time</th>
<th>Rarely</th>
<th>Some of the time</th>
<th>Often</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awesome Us was fun.</td>
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<td>○</td>
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<tr>
<td>Awesome Us was interesting.</td>
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<tr>
<td>Awesome Us gave me information I can use in my life.</td>
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<tr>
<td>I did strength activities outside of the Awesome Us classes; e.g. noticing strengths in myself and other people, using my strengths to deal with a challenge.</td>
<td>○</td>
<td>○</td>
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</tbody>
</table>
3. We would like to know what thoughts about life you've had during the PAST SEVERAL WEEKS. Think about how you spend each day and night and then think about how your life has been during most of this time.

Here are some items that ask you to indicate your satisfaction with life overall. Read each item and click the button on that line that indicates the extent to which you agree or disagree with each statement. For example, if you Strongly Agree with the statement “Life is great,” you would click the button under ‘Strongly Agree’ in the response column.

<table>
<thead>
<tr>
<th>1. My life is going well.</th>
<th>Strongly</th>
<th>Moderately</th>
<th>Mildly</th>
<th>Moderately</th>
<th>Strongly</th>
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</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>○</td>
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<td>2. My life is just right.</td>
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<td>Disagree</td>
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<td>3. I would like to change many things in my life.</td>
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<td>Disagree</td>
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<td>4. I wish I had a different kind of life.</td>
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<td>Disagree</td>
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<td>5. I have a good life.</td>
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<td>Disagree</td>
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<td>6. I have what I want in life.</td>
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<td>Disagree</td>
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<td>7. My life is better than most kids.</td>
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<td>Disagree</td>
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</tbody>
</table>

4. This question contains a number of words that describe different feelings and emotions. Thinking about yourself and how you normally feel, please indicate how often you have felt this way IN THE PAST WEEK.

Read each item and click the button on that line which corresponds to how often you have felt this way in the past week, e.g. never, not often, sometimes, often, or always.

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<tbody>
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<tr>
<td>1. Upset</td>
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<tr>
<td>2. Hostile (Angry)</td>
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<tr>
<td>3. Alert</td>
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<tr>
<td>4. Ashamed</td>
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<tr>
<td>5. Inspired (Lively)</td>
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<tr>
<td>6. Nervous</td>
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<tr>
<td>7. Determined</td>
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<td></td>
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<tr>
<td>8. Attentive (Paying good attention)</td>
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</tr>
<tr>
<td>9. Afraid</td>
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<td></td>
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<td></td>
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<tr>
<td>10. Active</td>
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</tbody>
</table>
# You in the Classroom

5. Here are some statements about how you behave and feel in the classroom. Read each statement and click the button on that line that best describes how true or not that statement is for you.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all</th>
<th>Not really true</th>
<th>Sort of true</th>
<th>Very true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I try hard to do well in school.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. In class, I work as hard as I can.</td>
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</tr>
<tr>
<td>3. When I'm in class, I participate in class discussions.</td>
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<tr>
<td>4. I pay attention in class.</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>5. When I'm in class, I listen very carefully.</td>
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<td></td>
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<tr>
<td>6. When I'm in class, I feel good.</td>
<td></td>
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<tr>
<td>7. When we work on something in class, I feel interested.</td>
<td></td>
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<tr>
<td>8. Class is fun.</td>
<td></td>
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<tr>
<td>9. I enjoy learning new things in class.</td>
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<tr>
<td>10. When we work on something in class, I get involved.</td>
<td></td>
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<tr>
<td>11. When I'm in class, I just act like I'm working.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. I don't try very hard at school.</td>
<td></td>
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</tr>
<tr>
<td>13. In class, I do just enough to get by.</td>
<td></td>
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<tr>
<td>14. When I'm in class, I think about other things.</td>
<td></td>
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<tr>
<td>15. When I'm in class, my mind wanders.</td>
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<tr>
<td>16. When we work on something in class, I feel bored.</td>
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<tr>
<td>17. When I'm in class, I feel worried.</td>
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<tr>
<td>18. When we work on something in class, I feel discouraged.</td>
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</tr>
<tr>
<td>19. Class is not all that fun for me.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>20. When I'm in class, I feel bad.</td>
<td></td>
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</tbody>
</table>
6. These questions are to find out what your class is like. Each sentence is meant to describe your class. If you agree with the sentence, click the YES button. If you don’t agree with the sentence, click the NO button. Please answer all the questions.

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Children are always fighting with each other.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Some of the children in our class are mean.</td>
<td></td>
<td></td>
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<tr>
<td>3. Many children in our class like to fight.</td>
<td></td>
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<tr>
<td>4. In my class everybody is my friend.</td>
<td></td>
<td></td>
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<tr>
<td>5. Some pupils don’t like other pupils.</td>
<td></td>
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</tr>
<tr>
<td>6. Some people in my class are not my friends.</td>
<td></td>
<td></td>
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<tr>
<td>7. Some children don’t like other children.</td>
<td></td>
<td></td>
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<tr>
<td>8. All of the children know each other well</td>
<td></td>
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<tr>
<td>9. Certain pupils always want to have their own way.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. All pupils in my class are close friends.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Children in our class fight a lot.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. All of the pupils in my class like one another.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Certain pupils don’t like what other pupils do.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Children in our class like each other as friends.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Using Your Strengths

7. This question asks you about using your strengths, that is, the things that you are able to do well or do best. Please read each statement and click the button on that line which corresponds to how much you agree or disagree with each statement.

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1. I am regularly able to do what I do best.</td>
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<tr>
<td>2. I always play to my strengths.</td>
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<td>3. I always try to use my strengths.</td>
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<tr>
<td>4. I achieve what I want by using my strengths.</td>
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<td>5. I use my strengths everyday.</td>
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<td>6. I am able to use my strengths in lots of different situations.</td>
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<td>7. I use my strengths to get what I want out of life.</td>
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<td>8. School gives me lots of opportunities to use my strengths.</td>
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<tr>
<td>9. My life presents me with lots of different ways to use my strengths.</td>
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<td>10. Using my strengths comes naturally to me.</td>
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<tr>
<td>11. I find it easy to use my strengths in the things I do.</td>
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<tr>
<td>12. Most of my time is spent doing things that I am good at doing.</td>
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<tr>
<td>13. Using my strengths is something I am familiar with.</td>
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<tr>
<td>14. I am able to use my strengths in lots of different ways.</td>
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</tbody>
</table>
8. We are interested in how you feel about yourself and how you think other people see you. For each statement, click the button on that line that best describes how true that statement is for you, e.g. not true, sort of true, or really true.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not true for me</th>
<th>Sort of true for me</th>
<th>Really true for me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel I do things well at school.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. My teachers like me and care about me.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I feel free to express myself at home</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. I feel my teachers think I am good at things.</td>
<td></td>
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<tr>
<td>5. I like to spend time with my parents.</td>
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<tr>
<td>6. I feel free to express myself with friends.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7. I feel I do things well at home</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. My parents like me and care about me.</td>
<td></td>
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<tr>
<td>9. I feel I have a choice about when and how to do my school work.</td>
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</tr>
<tr>
<td>10. I feel my parents think I am good at things.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. I like to be with my teachers.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. I feel I have a choice about which activities I do with my friend.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. I feel I do things well when I am with my friends.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. My friends like me and care about me.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. I feel free to express myself at home.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. I feel my friends think I am good at things.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. I like to spend time with my friends.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. I feel I have a choice about when and how to do my household jobs.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
9. You set a Personal Goal during Awesome Us. Please say why you chose this goal; you can choose from the 4 statements below.

I chose this goal because:

☐ 1. Someone else wanted me to.
☐ 2. I would feel bad or guilty if I didn't
☐ 3. I think it's an important goal to have.
☐ 4. It's a fun and enjoyable goal.

10. Have you finished or completed your Personal Goal already?

☐ Yes
☐ No
11. We’d like to know how you are doing with the Personal Goal you set during Awesome Us. Click the button that best describes how hard you are trying and how well you are doing with your goal, e.g. from 'not at all', to 'extremely'.

1. How hard are you trying at this goal this week?
2. How well have you done with your goal up to now?

12. You set a Friendship Goal during Awesome Us. Please say why you chose this goal; you can choose from the 4 statements below.

I chose this goal because:

1. Someone else wanted me to.
2. I would feel bad or guilty if I didn’t
3. I think it’s an important goal to have.
4. It’s a fun and enjoyable goal.

13. Have you finished or completed your Friendship Goal already?

Yes
No
14. We’d like to know how you are doing with the Friendship Goal you set during Awesome Us. Click the button that best describes how hard you are trying or how well you are doing with your Friendship goal, e.g. from 'not at all', to 'extremely'.

1. How hard are you trying at this goal this week? (1) Not at all  (2)  (3)  (4)  (5)  (6)  (7)  (8)  (9) Extremely
2. How well have you done on this goal up to now? (1) Not at all  (2)  (3)  (4)  (5)  (6)  (7)  (8)  (9) Extremely
Awesome Us Teacher Survey Feb 2011

Getting Started

Thank you for taking part in Awesome Us and for agreeing to complete this survey. Your answers will help us learn more about how well Awesome Us works for students and teachers.

It will take about 15 minutes to complete the survey depending how fast you go. It's important that you answer all of the questions. As you do the questions, you can check your progress on the bar at the bottom of the page.

This is a survey, not a test. There are no right or wrong answers. It is important to know what you REALLY think, so please answer all of the questions the way you really feel. No one will be told your answers. The class that completes the most of their surveys will win $150 and $150 for their teacher.

When you’ve finished all the questions on a page, click ‘Next’ to move to the next page.

When you have finished the survey click the ‘Done’ button. You will see a thank you page; please click the ‘Done’ button on that page to submit the survey.

1. Please enter your name, the name of your school, your classroom number, and your role (e.g. teacher, teacher aide, RTLB) in the boxes provided below.

First Name: 
Family Name: 
School: 
Classroom: 
Role: 
2. Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each statement over the last two weeks.

<table>
<thead>
<tr>
<th>Statement</th>
<th>None of the time</th>
<th>Rarely</th>
<th>Some of the time</th>
<th>Often</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>I've been feeling optimistic about the future.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've been feeling useful.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've been feeling relaxed.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've been feeling interested in other people.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've had energy to spare.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've been dealing with problems well.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've been thinking clearly.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've been feeling good about myself.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've been feeling close to other people.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've been feeling confident.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've been able to make up my own mind about things.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've been feeling loved.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I've been interested in new things.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>I've been feeling cheerful.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
### Importance of Strengths in the Classroom

3. Please rank the following 24 Character Strengths in order of how important you believe they are in the classroom. Another way of saying this is, rank them in order of how much you value each of these strengths in your classroom.

Please assign a ranking once only, i.e. only one first, one second, one third, etc.

<table>
<thead>
<tr>
<th>Rank each strength from 1 to 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity: thinking a little bit differently</td>
</tr>
<tr>
<td>Curiosity: wanting to find out</td>
</tr>
<tr>
<td>Love of Learning: enjoying learning new things</td>
</tr>
<tr>
<td>Open-Mindedness: enjoying difference, open to different people and ideas</td>
</tr>
<tr>
<td>Wisdom: understanding what is really important in life</td>
</tr>
<tr>
<td>Enthusiasm: eager and full of energy, raring to go</td>
</tr>
<tr>
<td>Persistence: sticking at things, not giving up</td>
</tr>
<tr>
<td>Courage: doing the right thing even when we feel scared</td>
</tr>
<tr>
<td>Honesty: telling the truth, being an open, straight forward person</td>
</tr>
<tr>
<td>Fairness: treating everyone equally</td>
</tr>
<tr>
<td>Teamwork: pulling together, working well with others</td>
</tr>
<tr>
<td>Leadership: helping or guiding other people to do something good and to get on well</td>
</tr>
<tr>
<td>Love: caring deeply and showing we care by thoughts, words and deeds</td>
</tr>
<tr>
<td>Kindness: doing and saying things to make people happy</td>
</tr>
<tr>
<td>Friendship: being gentle with ourselves and loyal and kind to other people</td>
</tr>
<tr>
<td>Gratitude: being thankful for good things, saying thank you</td>
</tr>
<tr>
<td>Spirituality: thinking deeply about God, love or the meaning of life</td>
</tr>
<tr>
<td>Humour: seeing the funny side of life and making others smile or laugh</td>
</tr>
<tr>
<td>Hope: trusting that good things will happen</td>
</tr>
<tr>
<td>Love of Beauty: noticing and enjoying good or beautiful things</td>
</tr>
<tr>
<td>Forgiveness: letting go of hurt and anger and wishing other people well again</td>
</tr>
<tr>
<td>Prudence: making good choices that affect our future</td>
</tr>
<tr>
<td>Self-control: controlling thoughts, emotions and actions so we live well and achieve our goals</td>
</tr>
<tr>
<td>Modesty: a true knowledge of our own strengths and weaknesses</td>
</tr>
</tbody>
</table>
### Using Your Strengths

4. The following questions ask you about your strengths, that is, the things you are able to do well or do best. Please respond to each item honestly, using the scale below, to indicate how much you agree or disagree with that statement.

<table>
<thead>
<tr>
<th></th>
<th>1. Strongly disagree</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7. Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I am regularly able to do what I do best.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>2.</td>
<td>I always play to my strengths.</td>
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<tr>
<td>3.</td>
<td>I always try to use my strengths.</td>
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<tr>
<td>4.</td>
<td>I achieve what I want by using my strengths.</td>
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<tr>
<td>5.</td>
<td>I use my strengths everyday.</td>
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<tr>
<td>6.</td>
<td>I am able to use my strengths in lots of different situations.</td>
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<tr>
<td>7.</td>
<td>I use my strengths to get what I want out of life.</td>
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<tr>
<td>8.</td>
<td>My work gives me lots of opportunities to use my strengths.</td>
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<tr>
<td>9.</td>
<td>My life presents me with lots of different ways to use my strengths.</td>
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<td>10.</td>
<td>Using my strengths comes naturally to me.</td>
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<td>Most of my time is spent doing things that I am good at doing.</td>
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<td>13.</td>
<td>Using my strengths is something I am familiar with.</td>
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<td>14.</td>
<td>I am able to use my strengths in lots of different ways.</td>
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</tbody>
</table>
## Noticing Strengths in Others

5. The items below ask you about identifying what other people do well. Please respond to each item honestly, using the scale below, to indicate how much you agree or disagree with that statement.

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am able to identify people's strengths with ease.</td>
<td></td>
</tr>
<tr>
<td>I notice people's strengths all the time.</td>
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</tr>
<tr>
<td>I believe I should be on the lookout for other people's strengths.</td>
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</tr>
<tr>
<td>In the past month I have suggested to a friend or colleague to try out their strengths on a new task.</td>
<td></td>
</tr>
<tr>
<td>I am very effective at spotting strengths in people.</td>
<td></td>
</tr>
<tr>
<td>It makes me feel good when I notice a strength in someone.</td>
<td></td>
</tr>
<tr>
<td>No matter where I am or what I am doing, I find that I am spotting strengths in people.</td>
<td></td>
</tr>
<tr>
<td>It is very important to pay attention to people's strengths and what they do well.</td>
<td></td>
</tr>
<tr>
<td>I give people suggestions for strengths use and development frequently.</td>
<td></td>
</tr>
<tr>
<td>I find it easy to identify people's strengths.</td>
<td></td>
</tr>
<tr>
<td>I get a deep sense of fulfillment from helping people see what their strengths are.</td>
<td></td>
</tr>
<tr>
<td>I find myself telling people about their strengths all the time.</td>
<td></td>
</tr>
<tr>
<td>I believe I have a responsibility to identify and develop strengths in others.</td>
<td></td>
</tr>
<tr>
<td>I always seem to know who would be the best person for which job and why.</td>
<td></td>
</tr>
<tr>
<td>I am skilled at spotting people's strengths.</td>
<td></td>
</tr>
<tr>
<td>Spotting strengths in people makes me feel happy.</td>
<td></td>
</tr>
<tr>
<td>I find myself identifying strengths in people in a wide variety of situations.</td>
<td></td>
</tr>
<tr>
<td>Helping people to understand their strengths is deeply important to me.</td>
<td></td>
</tr>
<tr>
<td>People appreciate my strengths insights because my insights help them to do their best work.</td>
<td></td>
</tr>
</tbody>
</table>
Awesome Us Teacher Survey April 2011

2. We want to know how you found participating in Awesome Us. Click the button next to each statement that best describes how Awesome Us was for you.

<table>
<thead>
<tr>
<th>None of the time</th>
<th>Rarely</th>
<th>Some of the time</th>
<th>Often</th>
<th>Almost every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awesome Us was interesting to me.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Awesome Us gave me information I can use in my life.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I did the classroom activities suggested in Awesome Us with my students.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I will continue to use the strengths information from Awesome Us in my classroom.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Awesome Us Teacher Survey July 2011

3. We want to know how useful Awesome Us is for you. Click the button next to each statement that best describes how Awesome Us was for you.

<table>
<thead>
<tr>
<th>None of the time</th>
<th>Rarely</th>
<th>Some of the time</th>
<th>Often</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>I used information from Awesome Us in my classroom in Term 2.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I will continue to use the strengths information from Awesome Us in my classroom.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
Appendix C – Ethical Approvals for the Awesome Us Study

Conditional Ethical Approval 10/161 for Programme Development Focus Groups

Full Approval 10/161 for Programme Development Focus Groups

Conditional Ethical Approval 10/179 for Noticing What’s Right with Us: a Character Strengths Development Programme for School Children

Full Approval 10/161 10/179 for Noticing What’s Right with Us: a Character Strengths Development Programme for School Children

Supplementary Approval 10/161 10/179 for Noticing What’s Right with Us: a Character Strengths Development Programme for School Children. Approval for inclusion of post-programme focus groups.
Dr N Swain  
Department of Psychological Medicine  
Dunedin School of Medicine  

28 April 2010

Dear Dr Swain

I am writing to let you know that, at its recent meeting, the Ethics Committee considered your proposal entitled "What will work best for students? Focus groups to assist with development of a character strengths programme for school children".

As a result of that consideration, the current status of your proposal is:- Conditional Approval

For your future reference, the Ethics Committee's reference code for this project is:- 10/061.
The comments and views expressed by the Ethics Committee concerning your proposal are as follows:-

Please change the "Assent Form" for Young People into a "Consent Form". In the Information Sheet for Young People please include the contact information in case they want to discuss the project with a member of the research team.

In the Information Sheet for child participants please inform them that the duration of their involvement is 1 3/4 hours.

What are character strengths? It is mentioned in the Information Sheets and Consent Form that it is possible that the discussion will cause distress. Why would a discussion of this topic cause distress? What is a character strengths programme?

Please do not assure participants and their parents/guardians of anonymity. Instead, in the Information Sheet and Consent Form, please state that "every attempt will be made to preserve my [child's] anonymity"

The Consent Form is written as if for an interview. Please change the wording so that it is more appropriate for a focus group situation. In the Consent Form for the focus groups please include a statement releying the obligation to keep the discussion at the focus group meeting confidential.
The publication details in the Information Sheet and Consent Form are unclear. Please clarify your intentions. Also, on page 7, you state that you are not wanting to publish at all. What is the purpose of the research if that is the case? How will the results be disseminated?

Please provide the Committee with copies of the updated Information Sheet and Consent Form, if changes have been necessary.

In order for full approval to be granted please write to me again addressing the issues raised above. Please note that the Committee is always willing to enter into dialogue with applicants over the points made. There may be information that has not been made available to the Committee, or aspects of the research may not have been fully understood.

Yours sincerely,

[Signature]

Mr Gary Witte  
Manager, Academic Committees  
Tel. 479 2256  
Email: gary.witte@otago.ac.nz

c.c. Assoc. Prof. O Davidson  Head  Department of Psychological Medicine
Dr N Swain  
Department of Psychological Medicine  
Dunedin School of Medicine

Dear Dr Swain

I am again writing to you concerning your proposal entitled "What will work best for students?" Focus groups to assist with development of a character strengths programme for school children", Ethics Committee reference number 10/061.

Thank you for sending to me an email addressing the comments from the Committee. Updated Information Sheets and Consent Forms were provided.

On the basis of this response, I am pleased to confirm that the proposal now has full ethical approval to proceed.

Approval is for up to three years. If this project has not been completed within three years from the date of this letter, re-approval must be requested. If the nature, consent, location, procedures or personnel of your approved application change, please advise me in writing.

Yours sincerely,  

Mr Gary Witte  
Manager, Academic Committees  
Tel: 479 8256  
Email: gary.witte@otago.ac.nz

cc. Professor P W Glue  Head  Department of Psychological Medicine
Dr N Swain  
Department of Psychological Medicine  
Dunedin School of Medicine

20 September 2010

Dear Dr Swain

I am writing to let you know that, at its recent meeting, the Ethics Committee considered your proposal entitled "Noticing What's Right with Us: a character strengths development programme for school children".

As a result of that consideration, the current status of your proposal is:- Conditional Approval

For your future reference, the Ethics Committee’s reference code for this project is:- 10/179. The comments and views expressed by the Ethics Committee concerning your proposal are as follows:-

Please include on the Information Sheet for Young People that they can go into another classroom if they do not wish to participate.

Please ensure parents and teachers of participants involved in the research are aware via the Information Sheet that there is both an experimental group and a control group involved in the study.

The Committee is of the view that offering the opportunity to win an ipod is an inappropriate incentive to child participants in the current research setting. The Committee would prefer to see, for example, more collective rewards, aiming to benefit an entire classroom.

Yours sincerely,

Mr Gary Witte  
Manager, Academic Committees  
Tel: 479 8258
Dr N Swain  
Department of Psychological Medicine  
Dunedin School of Medicine

4 November 2010

Dear Dr Swain,

I am again writing to you concerning your proposal entitled "Noticing What’s Right with Us: a character strengths development programme for school children", Ethics Committee reference number 10/179.

Thank you for sending to me amended copies of the Information Sheets. You have included the option for students to move to another classroom if they do not wish to participate, and have informed Parents/Guardians that there is both a control and an experimental group. We are grateful that you have chosen to use a collective rewards system.

On the basis of this response, I am pleased to confirm that the proposal now has full ethical approval to proceed.

Approval is for up to three years. If this project has not been completed within three years from the date of this letter, re-approval must be requested. If the nature, consent, location, procedures or personnel of your approved application change, please advise me in writing.

Yours sincerely,

Mr Gary Witte  
Manager, Academic Committees  
Tel: 479 8256  
Email: gary.witte@otago.ac.nz

c.c. Professor P W Glue  Head  Department of Psychological Medicine
Dr Nicola Swain  
Department of Psychological Medicine  
University of Otago

12 April 2011

Dear Dr Swain

Re: Noticing What’s Right With Us: a character strengths development programme for school children

Thank you for sending to me, through Denise Quinlan, the letter outlining the proposal to add a supplementary study to the original application. We are grateful for the detailed information provided by Ms Quinlan and are happy to approve the additional study.

We would be grateful however, if you could amend the Consent Form for Young People, where the concluding sentence states, ‘I consent to taking part in the focus group and to it being audio-taped’, while above this, and in the Information Sheet, it states that the students will be video-taped. Please include ‘video-taped’ in this concluding statement to clarify this for the participants.

Your proposal continues to be fully approved by the Human Ethics Committee. If the nature, consent, location, procedures or personnel of your approved application change, please advise me in writing. I hope all goes well for you with your upcoming research.

Yours sincerely

[Signature]

Gary Witte  
Manager, Academic Committees  
University of Otago

Cc Professor P W Glue, Head, Department of Psychological Medicine;  
Ms Denise Quinlan (via email)
Appendix D – Information Sheets and Consent Forms Used in the Awesome Us Study

Awesome Us Character Strengths Programme Information Sheet for Young People
Awesome Us Character Strengths Programme Consent Form for Young People
Awesome Us Character Strengths Programme Information Sheet for Parents and Guardians
Awesome Us Character Strengths Programme Consent Form for Parents and Guardians
Awesome Us Character Strengths Programme Information Sheet for Teachers and RTLBs
Awesome Us Character Strengths Programme Consent Form for Teachers and RTLBs
Talking about “Awesome Us”: Information Sheet for Young People Participating in Interviews
Talking about “Awesome Us”: Consent Form for Young People Participating in Interviews
Talking about “Awesome Us”: Information Sheet for Parents/Guardians of Young People Participating in Interviews
Talking about “Awesome Us”: Consent Form for Parents/Guardians of Young People Participating in Interviews
Talking about “Awesome Us”: Information Sheet for Teachers Participating in an Interview
Talking about “Awesome Us”: Consent Form for Teachers Participating in an Interview
“Awesome Us”
A Character Strengths Programme for School Children.
Information Sheet for Young People

My name is Denise Quinlan. As part of my University studies I am testing a Character Strengths Programme for students your age. Character Strengths are the things you do well and enjoy doing. Awesome Us will help students identify their strengths and think of new ways to develop them and use them more.

During the programme students learn to identify strengths in themselves and others; to identify ways to use their strengths in the future; and to set goals and use their strengths to pursue them. The classes include activities and games and students do the programme as a class group with their teacher.

The Strengths Programme takes place over seven workshops or classes:
• Six workshops (of 90 minutes); one workshop each week for six weeks
• A 90 minute follow-up workshop after a 4 week gap for optional strengths practice.

You do not have to take part if you don’t want to. If you decide you don’t want to take part, nothing will happen to you and you can go into another classroom while it takes place.

You will be asked to complete a questionnaire at school in February, April and July 2011. There are no right or wrong answers to these questions. The workshops will happen during the year and some of them will be videotaped. If at anytime during the workshops you want to leave you can. The videorecording and your questionnaire responses will only be seen by me and my university teachers (Nic Swain and Dianne Vella-Brodrick), and the report I will write on the Strengths Programme will not mention you or any student or your school by name.

The class with the highest number of completed surveys will win $150, and their teachers will also win $150. If more than one class is tied for first place, there will be a draw to decide the winner. If you have any concerns after the workshops you can come and talk to me. I will keep everything private but if I think that you might not be safe I might have to tell some other adults who can help me make you safe. Your parents have also been asked for consent for you to take part but if you don’t want to participate, then that’s fine. You can ask me any questions you like before you take part in Awesome Us.

What if you have any questions?
If you have any questions about our project, either now or in the future, please feel free to contact either:-

Denise Quinlan, PhD Candidate
Department of Psychological Medicine
Tel.: 03-4740999 ex 7360, Mob: 021 451016

Dr Nicola Swain, Senior Lecturer
Dept. of Psychological Medicine
Tel. 03-474-0999. Extn7299

Thanks for your time,
Denise Quinlan.

The University of Otago Human Ethics Committee has reviewed and approved this project.
“Awesome Us”
A Character Strengths Programme for School Children.
Consent Form for Young People

I understand that:

- I do not have to take part in the Strengths Programme if I don’t want to; nothing will happen to me and I can go to another class while it takes place.
- I will take part in 7 workshops with my class, which will include activities to identify strengths and learning how to use strengths to achieve my goals.
- I will be asked to complete a questionnaire three times. There are no right or wrong answers to these questions. The class which has the highest number of competed surveys will win $150 for the students and $150 for the teachers. If more than one class tie for first place, there will be a draw to decide the winner.
- At any stage I can choose to leave the workshops or stop doing the questionnaire and that is OK.
- Denise will produce a report on how the Strengths Programme works, but won’t use my name or the name of my school, and the videotape of our workshops will only be seen by her and her teachers (Nic and Dianne).
- If I have any concerns during or after the Strengths Programme I can talk about these with Denise.

I consent to taking part in the Strengths Programme, to it being videotaped, and to answering the questionnaires.

....................................................

Young person’s signature

Date:..................................
“Awesome Us”
A Character Strengths Programme for School Children.
INFORMATION SHEET FOR PARENTS / GUARDIANS OF YOUNG PEOPLE PARTICIPATING IN THE STRENGTHS PROGRAMME

Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to allow your child to participate. If you decide to allow them to participate we thank you. If you decide you do not want them to take part there will be no disadvantage to your child of any kind and we thank you for considering our request.

What is the Aim of the Project?
This project is being undertaken as part of PhD research in Psychology by Denise Quinlan with Dr Nicola Swain (Otago University) and Dr Dianne Vella-Brodrick (Monash University). It aims to examine the effect of a classroom-based Strengths Programme on children’s individual well-being, engagement for learning, and overall classroom climate. It is anticipated that this programme will increase children’s well-being, engagement and classroom climate.

What Type of Participants are being sought?
Participants must be students attending Year 5/6, Year 6 or Year 7/8 at a school participating in this project. Students will participate in their classroom groups, with their classroom teacher, the facilitator and another school teacher or RLB present. Teachers and RLBs will be trained for their roles in the workshops.

What will Participants be Asked to Do?
The Strengths Programme takes place over seven workshops or classes:
• Six workshops (of 90 minutes); one workshop each week for six weeks
• A 90 minute follow-up workshop after a 4 week optional strengths practice period.

During the workshops students will learn to identify strengths in themselves and others, to recognise where they have used their strengths successfully in the past, to identify opportunities for applying their strengths to challenges they face, and to set goals and use their strengths to pursue them.

Students will be assigned either to an experimental group or a control group. The experimental group will do the programme and complete surveys before and after. The control group will complete all the surveys but not do the programme. These classes and their teacher will be offered the opportunity to do the programme afterwards.

Please be aware that you may decide not to take part in the project without any disadvantage to your or your child of any kind. They will go to another classroom in their year group while workshops take place.
Can Participants Change their Mind and Withdraw from the Project?
Your child may withdraw from participation in the project at any time and without any disadvantage to them or you of any kind.

What Data or Information will be Collected and What Use will be Made of it?
The Strengths Programme sessions will be videotaped by the researchers (Dr Nicola Swain and Denise Quinlan of Otago University and Dr Dianne Vella-Brodrick of Monash University). Your child will also be asked to complete an on-line survey conducted at school, before and after the Strengths Programme, and three months later. The class with the highest number of completed surveys will win $150, and their teachers will also win $150. If more than one class is tied for first place, there will be a draw to decide the winner;

Every effort will be made to preserve your child’s anonymity. Your child’s name and contact details will be kept until the all questionnaire information has been collected. At this time all personal details will be destroyed. The workshop video recordings and your child’s responses to questions will be seen only by the three researchers named above. They will be kept in a secure place for five years after completion of the main study, at which time it will be destroyed by Dr Swain.

An evaluation of the Character Strengths Programme will be published and available in the University of Otago Library (Dunedin, New Zealand). Your child’s name and school will not be mentioned in any document published in connection with the Character Strengths Programme. Information on the Character Strengths Programme will be made available to your child’s school after the evaluation is complete.

What if Participants have any Questions?
If you have any questions about our project, either now or in the future, please feel free to contact either:

Denise Quinlan, PhD Candidate or Dr Nicola Swain, Senior Lecturer
Department of Psychological Medicine Dept. of Psychological Medicine
Tel.: 03-4740999 ex 7360, Mob: 021 451016 Tel. 03-474-0999, Extn7299

This study has been approved by the University of Otago Human Ethics Committee. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph 03 479 8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.
“Awesome Us”
A Character Strengths Programme for School Children.
CONSENT FORM FOR
Parent/Guardians of Students participating in the Strengths Programme

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage. I know that:-

1. My child’s participation in the project is entirely voluntary;
2. My child is free to withdraw from the project at any time without any disadvantage;
3. My child will be asked to complete three questionnaires as part of the study; the class group with the highest completion of questionnaires will receive $150 for students and $150 for teachers. If more than one class is tied for first place, there will be a draw to decide the winner;
4. An evaluation of the Strengths Programme will be published and will be available in the University of Otago Library (Dunedin, New Zealand). Every attempt will be made to preserve my child’s anonymity and nothing that could identify my child or their school will be published in any document published in connection with the Strengths Programme. Information on the Strengths Programme will be made available to my child’s school.
5. My child’s name and contact details will be retained for the duration of the evaluation of the Character Strengths programme. At the end of the study these details will be destroyed. Data and analysis on which the results of the project depend will be retained in secure storage for five years, after which time they will be destroyed.

I agree to my child taking part in this project.

Child’s name:
Child’s date of birth (dd/mm/yy): Child’s School:
Which Ethnic group does your child belong to: (circle the group or groups that apply to them)

New Zealand European | Niuean
Maori | Chinese
Samoan | Indian
Cook island Maori | Other (please state):
Tongan

Parent’s Name:……………………………………………..Date:……………………………. Parent/Guardian’s Signature:………………………………………………………………………

This study has been approved by the University of Otago Human Ethics Committee. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph 03 479 8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.
Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you of any kind and we thank you for considering our request.

**What is the Aim of the Project?**

This project is being undertaken as part of PhD research in Psychology at Otago University and aims to examine the effect of a classroom-based Strengths Programme on children’s individual well-being, engagement for learning, and overall classroom climate. It is anticipated that this programme will increase children’s well-being, engagement and classroom climate. It will also evaluate the effect of the Programme on teacher well-being.

**What Type of Participants are being sought?**

Classrooms of Year 5/6, Year 6 or Year 7/8 students and their teachers are sought at schools which have volunteered to participate in this project. Students will participate in their classroom groups, with their classroom teacher, the Programme facilitator and, where possible, with another school teacher or Resource Teacher: Learning Behaviour (RTLB) assisting to deliver the Programme. Teachers and RTLBs will receive training for their roles in the workshops.

**What will Participants be Asked to Do?**

The Strengths Programme will involve students, teachers and RTLB participating in:

- **Six 90 minute workshops** (of three hours duration), one each week for six weeks.
- Optional strengths practice: a four-week period during which students are encouraged to work on the goals they have set during the workshops. **Teachers are provided with optional strengths activities to do in class.**
- **A 90 minute follow-up workshop** after the four-week strengths practice period.

During the workshops the Programme Facilitators (including teacher and RTLB) will help students learn to identify strengths in themselves and others through engaging activities; to recognise where they have used their strengths successfully in the past; to identify opportunities for applying their strengths to challenges they face; to set goals they value personally and use their strengths to pursue them; and to practice using their strengths to build friendships.

Students will be assigned either to an experimental group or a control group. The experimental group will do the programme and complete surveys before and after. The control group will complete all the surveys but not do the programme. These classes and their teacher will be offered the opportunity to do the programme afterwards.
Appendices

Please be aware that you may decide not to take part in the project without any disadvantage to yourself of any kind.

**Can Participants Change their Mind and Withdraw from the Project?**

You may withdraw from participation in the project at any time and without any disadvantage to yourself of any kind.

**What Data or Information will be Collected and What Use will be Made of it?**

The Strengths Programme workshops will be videotaped and reviewed by the researchers (Dr Nicola Swain and Denise Quinlan of Otago University and Dr Dianne Vella-Brodrick of Monash University).

You will also be asked to complete a questionnaire, before and after the Strengths Programme, and three months later. The class with the highest number of completed surveys will win $150, and their teachers will also win $150; this prize will be drawn if classes are tied.

Every effort will be made to preserve your anonymity. Your name and contact details will be kept until the all questionnaire information has been collected. At this time all personal details will be destroyed. The workshop video recordings and your responses to questions will be seen only by the three researchers named above. They will be kept in a secure place for five years after completion of the main study, at which time they will be destroyed by Dr Swain.

An evaluation of the Character Strengths Programme will be published and available in the University of Otago Library (Dunedin, New Zealand). Your name, students’ names or school will not be mentioned in any document published in connection with the Character Strengths Programme. Information on the Character Strengths Programme will be made available to your school after the evaluation is complete.

**What if Participants have any Questions?**

If you have any questions about our project, either now or in the future, please feel free to contact either:-

Denise Quinlan, PhD Candidate or Dr Nicola Swain, Senior Lecturer
Department of Psychological Medicine Dept. of Psychological Medicine
Tel.: 03-4740999 ex 7360, Mob: 021 451016 Tel. 03-474-0999. Extn7299

This study has been approved by the University of Otago Human Ethics Committee. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph 03 479 8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.
“Awesome Us”
A Character Strengths Programme for School Children.
CONSENT FORM FOR
Teachers and RTLBs participating in the Strengths Programme

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:-

1. My participation in the project is entirely voluntary;

2. I am free to withdraw from the project at any time without any disadvantage;

3. I will be asked to complete three questionnaires as part of the study, and that class groups with the highest completion of questionnaires will receive $150 for students and $150 for teachers. If more than one class is tied for first place, there will be a draw to decide the winner;

4. An evaluation of the Strengths Programme will be published and will be available in the University of Otago Library (Dunedin, New Zealand). Every attempt will be made to preserve my anonymity. My name, students’ names, or my school will not be mentioned in any document published in connection with the Character Strengths Programme. Information on the Character Strengths Programme will be made available to my school after the evaluation is complete.

5. My name and contact details will be kept until the all questionnaire information has been collected. At this time my personal details will be destroyed. Data and analysis on which the results of the project depend, including the video recordings, will be retained in secure storage for five years, after which time they will be destroyed by Dr Swain.

I agree to take part in this project.

Name: ........................................................................................................

..................................................................................................................

(Signature of participant) (Date)

This study has been approved by the University of Otago Human Ethics Committee. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph 03 479 8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.
Talking about “Awesome Us”:
Learning from Students’ Experience of the Programme.
Information Sheet for Young People

Thank you very much for taking part in Awesome Us at your school. To understand in more
detail about what was helpful and what wasn’t in the programme, we are inviting a sample of
students to talk to us about their experience of the programme.

This interview will be with me, Denise Quinlan, and we will talk about what you enjoyed and
didn’t in the programme, what it was like to find out about your strengths and what it’s like to
use your strengths.

You do not have to take part if you don’t want to. If you decide you don’t want to take part,
nothing will happen to you.

The interview will be videotaped. If at anytime during the interview you want to stop you
can and that’s OK. The videorecording will only be seen by me and my university teachers
(Nic Swain and Dianne Vella-Brodrick), and the report I will write on students’ views of
Awesome Us, will not mention you or any student or your school by name.

I will keep everything you say private but if I think that you might not be safe I might have to
tell some other adults who can help me make you safe. Your parents have also been asked
for their consent for you to talk to me, but if you don’t want to, then that’s fine and nothing
will happen to you as a result. You can ask me any questions you like before you we talk.

What if you have any questions?

If you have any questions about our project, either now or in the future, please feel free to
contact either:-
Denise Quinlan or Dr Nicola Swain
Department of Psychological Medicine Dept. of Psychological Medicine
University Telephone Number: University Telephone Number:
-03-474-7007 - 03-474-7007. Extn7299
Mobile: 021 451016

Thanks for your time,

Denise Quinlan,
PhD Candidate, University of Otago

This study has been approved by the University of Otago Human Ethics Committee. If you have any concerns
about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee
Administrator (ph 03 479 8256). Any issues you raise will be treated in confidence and investigated and you
will be informed of the outcome.
Talking about “Awesome Us”:
Learning from Students’ Experience of the Programme
Consent Form for Young People

I understand that:

• I do not have to take part in this interview if I don’t want to and nothing will happen to me.
• Denise will be asking me questions about what I enjoyed and didn’t in Awesome Us, what it was like to find out about my strengths and what it’s like to use my strengths.
• There are no right or wrong answers and if I don’t want to answer some of the questions that’s fine.
• Anytime I want to stop talking that’s okay.
• Denise will write a report on students’ views of Awesome Us and will not mention me or any student or my school by name.
• The video recording of my interview will only be seen by her and her teachers (Nic and Dianne).
• If I have any concerns about our talk then I can talk about these with Denise.

I consent to Denise talking with me and to the talk being videotaped.

....................................................

Young person’s signature

Date:........................................
Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to allow your child to participate. If you decide to allow them to participate we thank you. If you decide you do not want them to take part there will be no disadvantage to your child of any kind and we thank you for considering our request.

What is the Aim of the Project?

Thank you very much for allowing your child to take part in the Awesome Us character strengths programme at their school. Your child’s participation has helped us learn more about how the programme works. To understand in more detail what was helpful for individual children, and what wasn’t, we are inviting a sample of students to talk to us individually about their experience of the programme.

What will Participants be Asked to Do?

Should you agree to take your child taking part, they will be interviewed in an informal conversation in they will be asked what they enjoyed and didn’t in the programme, what it was like to find out about their strengths and what it’s like to use their strengths.

Can Participants Change their Mind and Withdraw from the Project?

Your child may withdraw from participation in the interview at any time and without any disadvantage to them or you of any kind.

What Data or Information will be Collected and What Use will be Made of it?

The interview will be videotaped. The videorecording will be reviewed only by the researchers (Dr Nicola Swain and Denise Quinlan of Otago University and Dr Dianne Vella-Brodrick of Monash University). It will be kept in a secure place for five years after completion of the main study, at which time it will be destroyed by Dr Swain.

Every effort will be made to preserve your child's anonymity. An evaluation of the character strengths programme, including the views of participants will be published and available in the University of Otago Library (Dunedin, New Zealand). Your child’s name and school will not be mentioned in any document published in connection with the Character Strengths Programme.
**What if Participants have any Questions?**

If you have any questions about our project, either now or in the future, please feel free to contact either:-

Denise Quinlan or Dr Nicola Swain

Department of Psychological Medicine Dept. of Psychological Medicine

University Telephone Number: University Telephone Number:

-03-474-7007 Extn7360 - 03-474-7007. Extn7299

0r Mobile: 021 451016

This study has been approved by the University of Otago Human Ethics Committee. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph 03 479 8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.
Talking about “Awesome Us”: Learning from Students’ Experience of the Programme

CONSENT FORM FOR PARENTS / GUARDIANS OF YOUNG PEOPLE PARTICIPATING IN INTERVIEWS

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:-

1. My child’s participation in the interview is entirely voluntary;

2. My child will be asked about their experience of the strengths programme and their strengths;

3. My child is free to withdraw from the project at any time without any disadvantage;

4. The interview will be videotaped. The videorecording will be reviewed only by the researchers (Dr Nicola Swain and Denise Quinlan of Otago University and Dr Dianne Vella-Brodrick of Monash University). It will be kept in a secure place for five years after completion of the main study, at which time it will be destroyed by Dr Swain. At the end of the study my child’s name and contact details will be destroyed.

5. Every attempt will be made to preserve my child’s anonymity and nothing that could identify my child or their school will be published in the evaluation of the Strengths Programme which will be available in the University of Otago Library (Dunedin, New Zealand).

I agree to my child taking part in this project.

Child’s Name:....................................... Date:............................

Parent’s Name:...........................................

..............................................................

(Signature of Parent/Guardian of the Participant)

This study has been approved by the University of Otago Human Ethics Committee. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph 03 479 8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.
Talking about “Awesome Us”: 
Learning from Students’ and Teachers’ Experience of the Programme

Information Sheet For 
Teachers participating in an Interview

Thank you for taking part with your class in the Awesome Us Strengths Programme. To learn more about what worked and what didn’t for you and for students in Awesome Us, we would like to invite you to take part in an individual interview.

Interviews will be arranged at a time convenient for you, and last one hour. You will be asked to discuss your experience of Awesome Us in the classroom; how useful or relevant you found the information; any changes you observed in overall classroom environment or individual student behaviour; and any changes to the programme which you believe would increase its effectiveness or appeal for students.

Please be aware that you may decide not to take part in the interview without any disadvantage to yourself of any kind. You may withdraw from participation in the interview at any time and without any disadvantage to yourself of any kind.

What Data or Information will be Collected and What Use will be Made of it?
Interviews will be audio or video-taped and transcripts made. These will be reviewed by the researchers (Dr Nicola Swain and Denise Quinlan of Otago University and Dr Dianne Vella-Brodrick of Monash University).

Every effort will be made to preserve your anonymity. Transcripts and analysis of the interviews will not use participants’ names. The audio recordings and notes will be seen only by the three researchers named above. They will be kept in a secure place for five years after completion of the main study, at which time the information will be destroyed by Dr Swain.

An evaluation of the Awesome Us Strengths Programme will be published and available in the University of Otago Library (Dunedin, New Zealand). Your name, students’ names or your school will not be mentioned in any document published in connection with the Character Strengths Programme. Information on the Character Strengths Programme will be made available to your school after the evaluation is complete.

What if Participants have any Questions?
If you have any questions about our project, either now or in the future, please feel free to contact either:

Denise Quinlan, PhD Candidate or Dr Nicola Swain, Senior Lecturer
Department of Psychological Medicine Dept. of Psychological Medicine
Tel.: 03-4740999 ex 7360, Mob: 021 451016 Tel. 03-474-0999. Extn7299

This study has been approved by the University of Otago Human Ethics Committee. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph 03 479 8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.
Talking about “Awesome Us”:
Learning from Students’ and Teachers’ Experience of the Programme

CONSENT FORM FOR
Teachers participating in an Interview

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:-

1. My participation in the interview is entirely voluntary;

2. I am free to withdraw from the interview at any time without any disadvantage;

3. I will be asked to take part in an individual interview, which will be video or audio-taped, to discuss my experience of the Awesome Us programme.

4. An evaluation of the Strengths Programme will be published and will be available in the University of Otago Library (Dunedin, New Zealand). Every attempt will be made to preserve my anonymity. My name, students’ names, or my school will not be mentioned in any document published in connection with the Character Strengths Programme. Information on the Character Strengths Programme will be made available to my school after the evaluation is complete.

5. My name and contact details will be retained for the duration of the evaluation of the Character Strengths programme. At the end of the study these details will be destroyed. Data and analysis on which the results of the project depend, including audio recordings, will be retained in secure storage for five years, after which time they will be destroyed by Dr Swain.

I agree to take part in this project.

Name: ........................................................................................................

.......................................................................................................................

(Signature of participant) (Date)

This study has been approved by the University of Otago Human Ethics Committee. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph 03 479 8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.
Appendix E - Awesome Us Feedback Form for Student Pilot Participants

**Reference Number 10/179**  
3 December 2010

Name:  
Classroom:  
Teacher:  

Please rate the different parts of Awesome Us on how easy, interesting and useful they were for you. **Rate each section by putting a score from 1 to 5 in the boxes beside each line. Use the rating scales below for your scores.**

| 1. How was Awesome Us for you? | How Easy:  
1=very easy;  
3= can do it OK;  
5= very hard | How Interesting:  
1= very boring;  
3= OK;  
5= very interesting | How Useful:  
1= no use to me  
3= a bit useful;  
5= really useful to me |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths-spotting:</strong> Strengths are things we enjoy and do well, and people who like the same activities can have different strengths.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Collage of you at your best:</strong> you put photos on a page to show you at your best and got a picture of your collage to keep.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3 into 1:</strong> finding the best part of your favourite subject, hobby and sport and creating a new activity that uses all 3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rating your Character Strengths:</strong> you rated your strengths from 1 to 24 on a sheet.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Class Strengths:</strong> you put ‘postits’ on the strengths posters so we could see what the class</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
strengths are.

| **Strength Superheroes:** you made posters of one of your strengths as a Superhero and said when you would use the strength. |
| **Strengths in a Challenge:** you wrote down a challenge you have and put the strength cards around it that you would use to deal with the challenge. |
| **Setting a Personal Goal:** you set a goal you care about and planned how you will use some of your strengths to help you achieve it. |
| **Setting a Goal to Help Someone Else:** you set a goal to help someone and planned how you will use your strengths to achieve it. |
| **Setting a Goal to Be a Good Friend:** you set a goal to build or strengths a friendship and planned how you will use your strengths to achieve it. |
| **Personal Strengths Poster:** you made a poster that reminds you of what’s best about you (e.g., strengths, favourite activities). |

2. What are two things about Awesome Us that you would keep the same? Why?

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

3. What are two things about Awesome Us that you would change? Why?

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

4. Would you tell your friends to do Awesome Us? Yes/No (Circle one)

Why?_____________________________________________________________

__________________________________________________________________
5. The best thing I learned about myself in Awesome Us is...

__________________________________________________________________

__________________________________________________________________

6. The best thing I learned about people in my class in Awesome Us is...

__________________________________________________________________

__________________________________________________________________

7. What was the best thing about Awesome Us?

__________________________________________________________________

__________________________________________________________________

8. What was the worst thing about Awesome Us?

__________________________________________________________________

__________________________________________________________________

9. I notice and use my strengths…
(circle the answer that applies to you)

| • never    | • once a week |
| • several times a week | • almost every day |
| • lots each day |

10. I am using my strengths…
(circle the answers that apply to you)

| • at school | • at home |
| • with my friends | • in my sport/hobbies |
| • not at all |

11. My friends in my class help me notice my strengths…
(circle the answer that applies to you)

| • never | • once a week |
| • several times a week | • almost every day |
| • every day |
12. What gets in the way of me using my strengths is…

__________________________________________________________________
__________________________________________________________________

13. I am working towards the goals I set in Awesome Us… (circle the answer that applies to you)

• never
• once a week
• several times a week
• almost every day
• every day

14. My friends who know my strengths help me work on my goals … (circle the answer that applies to you)

• never
• once a week
• several times a week
• almost every day
• every day

15. What’s the best possible use you could make of one of your strengths today?

__________________________________________________________________

Thank you very much for answering these questions and for taking part in Awesome Us.

You are Awesome!
Appendix F – Gender Differences in Student Feedback on Programme Component

Difficulty, Interest, and Usefulness, using Student’s T-test

Table F.1

<table>
<thead>
<tr>
<th>Programme Component</th>
<th>Measure</th>
<th>Girls</th>
<th>Boys</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengths-spotting</td>
<td>Difficulty</td>
<td>3.50</td>
<td>1.90</td>
<td>0.005**</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>3.25</td>
<td>3.10</td>
<td>0.394</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>3.08</td>
<td>3.30</td>
<td>0.328</td>
</tr>
<tr>
<td>Collage of you at your best</td>
<td>Difficulty</td>
<td>1.00</td>
<td>1.80</td>
<td>0.007**</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>4.08</td>
<td>3.80</td>
<td>0.319</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>3.58</td>
<td>3.00</td>
<td>0.176</td>
</tr>
<tr>
<td>3 rolled into 1</td>
<td>Difficulty</td>
<td>3.00</td>
<td>2.30</td>
<td>0.051</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>2.25</td>
<td>3.30</td>
<td>0.009**</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>2.75</td>
<td>2.80</td>
<td>0.465</td>
</tr>
<tr>
<td>Rating your character strengths:</td>
<td>Difficulty</td>
<td>3.42</td>
<td>3.00</td>
<td>0.247</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>3.58</td>
<td>2.60</td>
<td>0.050</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>3.75</td>
<td>2.20</td>
<td>0.001**†</td>
</tr>
<tr>
<td>Class strengths</td>
<td>Difficulty</td>
<td>1.83</td>
<td>2.20</td>
<td>0.208</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>3.25</td>
<td>2.50</td>
<td>0.073</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>2.83</td>
<td>2.60</td>
<td>0.345</td>
</tr>
<tr>
<td>Strength super heroes</td>
<td>Difficulty</td>
<td>2.75</td>
<td>2.50</td>
<td>0.331</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>4.00</td>
<td>2.90</td>
<td>0.061</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>3.83</td>
<td>2.90</td>
<td>0.109</td>
</tr>
<tr>
<td>Strengths in a challenge</td>
<td>Difficulty</td>
<td>2.75</td>
<td>3.10</td>
<td>0.237</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>3.08</td>
<td>2.80</td>
<td>0.286</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>3.42</td>
<td>3.70</td>
<td>0.288</td>
</tr>
<tr>
<td>Setting a personal goal</td>
<td>Difficulty</td>
<td>2.50</td>
<td>2.80</td>
<td>0.442</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>3.25</td>
<td>3.00</td>
<td>0.144</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>3.42</td>
<td>3.30</td>
<td>0.199</td>
</tr>
<tr>
<td>Setting a goal to help someone else</td>
<td>Difficulty</td>
<td>2.67</td>
<td>2.20</td>
<td>0.128</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>2.58</td>
<td>3.10</td>
<td>0.280</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>2.67</td>
<td>2.80</td>
<td>0.423</td>
</tr>
<tr>
<td>Setting a goal to be a good friend</td>
<td>Difficulty</td>
<td>2.33</td>
<td>2.30</td>
<td>0.321</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>3.33</td>
<td>3.50</td>
<td>0.390</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>3.08</td>
<td>2.70</td>
<td>0.130</td>
</tr>
<tr>
<td>Personal strengths poster</td>
<td>Difficulty</td>
<td>2.33</td>
<td>1.90</td>
<td>0.493</td>
</tr>
<tr>
<td></td>
<td>Interest</td>
<td>3.33</td>
<td>3.10</td>
<td>0.004**</td>
</tr>
<tr>
<td></td>
<td>Usefulness</td>
<td>3.08</td>
<td>2.70</td>
<td>0.006**</td>
</tr>
</tbody>
</table>

Note. * = p<0.05, ** = p<0.01. † A Bonferroni adjustment for the number of tests performed would stipulate a significant level of p < .0015. At this level, only one test would be significant.
Appendix G – Treatment of Missing Values and Outliers, Assessment of Normality, and Statistical Power Calculation in Analysis of Student Data (Chapter 6)

Data Cleaning and Missing Values

Three cases were deleted where participants had not completed the intervention programme or post-test surveys, resulting in a data set of N = 193. For the pre-test variables between 0.5 and 4.1% of the data were missing, with the exception of Classroom Engagement (14.5%). At post-test there were between 0.0% and 2.6% missing data for all variables except Strengths Use (7.3%). Adjustments to the online survey, which reminded participants if they had skipped an item, resulted in lower levels of missing data at follow up, with all variables between 2.1 to 3.1%. Analysis of the missing data using separate variance t-tests and Little’s MCAR test indicated that it was missing completely at random. Cases with missing data were excluded from analysis on a variable by variable (pairwise) basis so that sample sizes could be maximised.

Treatment of Outliers and Assessment of Normality

Univariate outliers were identified by standardising scores for each variable with outliers for intervention and control groups combined identified as $z = > +/\sim 3.29$ (p<.001), two-tailed test as recommended by Tabachnik and Fidell (2007). Outliers were confirmed as legitimate data. These outliers were truncated using the next highest score plus one as recommended by Field (2005) and Tabachnick and Fidell (2007) to reduce their impact on statistical analyses. Analysis of the data post-truncation of outliers revealed that skewness and kurtosis were within acceptable limits for both intervention and control groups with greatest values across all time periods at -1.129 to +.597 for skewness and -1.07 to +1.689 for kurtosis for intervention group, and -1.041 to +.757 for skewness and -1.107 to +1.288 for kurtosis for the control group. Comparable scores for the combined group were -1.083 to +.623 for skewness and -.874 to +1.157 for kurtosis. As skewness and kurtosis were within acceptable limits, it was not necessary to transform the data.
Statistical Power Calculation

A statistical power calculation was conducted using the “pwr” package in R version 2.92 (Champely, 2009). This study was specified as involving a series of five hypotheses, measured on a series of scales all of a Likert or pseudo-Likert type. These scales were to be treated as nominal scales, although technically ordinal, as is common practice for a Likert-type scale.

Analysis of variance (ANOVA) was planned as the main tool for statistical analysis to determine significance. Previous research in this field had indicated that most effect sizes were in the small to medium range. Two power calculations were conducted, one provided required group size for a small effect size and the other for a medium effect size.

Results of the power calculation indicated that a group size of 28 would be required to detect a medium effect, or a group size of 168 to detect a small effect. The study includes nine groups, including the control groups. This implied that that the study required nine groups of 168 (1512 participants in total) to detect a small difference, or nine groups of 28 (252 total) to detect a medium difference, at 80% power. The study aimed to recruit nine groups of 28-30 participants, however, issues with participation in one class and smaller class numbers in some participating schools meant that slightly fewer participants (196) were initially recruited. Accordingly the study is underpowered to detect moderate differences and results may include both Type I and Type II errors.
Appendix H – Treatment of Missing Values and Outliers, and Assessment of Normality in Analysis of Teacher Data (Chapter 7)

Missing Values

Seven teachers were included in the intervention group data set; one class had two part-time teachers. Three teachers were included for the control group. All teachers completed the surveys at pre-test with no missing data, with the exception of one teacher who failed to complete the strengths orientation measure, producing a missing values effect of 10% for that measure. All teachers completed the survey at post-test with no missing data. At follow-up, two teachers, one each from intervention and control, failed to complete surveys resulting in 20% missing data for this time period. Missing values analysis using separate variance t-tests showed no systematic relationship between missingness on each of well-being, strengths use, and strengths orientation at follow-up and any of the other variables at pre-test and post-test. Little’s MCAR test produced a non-significant result, $\chi^2 = 9.61, DF = 11, p = .566$, so it can be inferred data were missing completely at random. However, imputation was not appropriate given the small size of the data set. Cases with missing data were excluded on a variable by variable (pairwise) basis from ANOVA and ANCOVA analysis and listwise from regression analyses.

Treatment of Outliers and Assessment of Normality of the Teacher Sample

A check for univariate outliers for the overall teacher study group was made by standardising scores for each variable, where outliers were identified as $z = > +/- 3.29 (p < .001)$, using a two-tailed test as recommended by Tabachnik and Fidell (2007). This indicated that the data set contained no outliers. Analysis of the combined group dataset revealed that skewness and kurtosis were within acceptable limits with the greatest values across all time periods at -1.388 to +.449 for skew and -1.406 to +2.578 for kurtosis.
Statistical Power Calculation

Statistical power calculations were conducted using the G*Power 3.1.6 (Faul, Erdfelder, Lang, & Buchner, 2007) for the t-tests of teacher group differences on measures of well-being, strengths orientation, and strengths use, one for a small effect size, and another for a medium or moderate effect size. In both cases, it was specified that the samples were of unequal size. Variables were measured on a series of scales all of a Likert or pseudo-Likert type. These scales were to be treated as nominal scales, although technically ordinal, as is common practice for a Likert-type scale. Results of the power calculations indicated that at 80% power, a total sample size of 114 would be required to detect a medium effect, or a total sample size of 698 to detect a small effect. These results highlight the inadequacy of the teacher sample group for meaningful analysis. The teacher sample was collected primarily to describe the teachers of the student sample, and to assess the influence of teacher attitudes on student outcomes.

A second power calculation was conducted, using the same software, for the repeated measures ANOVA of differences between the high and low strengths-match groups on five measures. Results of the power calculations indicated that, at 80% power, a total sample size of 194 would be required to detect a medium effect. Again this indicated that the achieved sample was very inadequate and would be susceptible to both Type I and Type II errors. The results, whilst they reveal some interesting patterns between the high and low strengths-match groups, cannot be regarded as reliable.

A further set of power calculations were conducted using the same software for the hierarchical (sequential) regressions of three teacher change variables (tested) and controlling for two other student variables (not tested), on each of four student measures; one calculation for a small effect size, and another for a medium or moderate effect size. Results of the power calculations indicated that at 80% power, a total sample size of 77 would be required to detect a medium effect, or a total sample size of 550 to detect a small effect. These calculations suggest that the study was adequately power to detect moderate sized differences as the achieved sample was 193, i.e. the full
student sample. However, the study was underpowered to detect small differences. Hence, the analysis may be susceptible to both Type I and Type II errors.
Appendix I – Statistics on Regression Model Validity (Chapter 7)

Table I.1
*Statistics for Regressions of Student Outcomes.*

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Recc’d levels</th>
<th>Positive affect</th>
<th>Classroom engagement</th>
<th>Modified class climate</th>
<th>Relatedness</th>
<th>Intrinsic need satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max $r$, all variables</td>
<td>&lt; .7</td>
<td>0.57</td>
<td>.66</td>
<td>.56</td>
<td>.57</td>
<td>.70</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.0 - 3.0</td>
<td>1.859</td>
<td>2.115</td>
<td>1.990</td>
<td>1.907</td>
<td>1.880</td>
</tr>
<tr>
<td>Max Mahalanobis Distance</td>
<td>&lt; 20.52</td>
<td>12.19</td>
<td>11.86</td>
<td>12.78</td>
<td>13.64</td>
<td>17.34</td>
</tr>
<tr>
<td>Max. Cook's Distance</td>
<td>&lt; 1.0</td>
<td>0.065</td>
<td>.072</td>
<td>.097</td>
<td>.22</td>
<td>.23</td>
</tr>
</tbody>
</table>