

Chapter 4

Measuring Whole-School Well-being in Students and Staff

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A Multifaceted Whole-School Approach to Well-being in Students and Staff: Health Benefits and Job Satisfaction

In 2009, Seligman and colleagues defined positive education as “education for both traditional skills and for happiness” (p. 293). We define positive education as an umbrella term used to describe empirically validated interventions and programs from positive psychology that have an impact on student well-being (White and Waters 2014). This chapter outlines a framework for teaching positive psychology skills to an entire school, and foreshadowed a “new prosperity” (p. 308) that shifts educational policy from welfare to well-being. Although many commentators agreed with Seligman et al.’s perspective, only a handful of publications have directly introduced well-being strategies to schools, beyond specific focused interventions (Waters 2012; White 2009, 2010). In response to the 2009 study, the current chapter contributes to well-being discourse by applying the first multi-dimensional, whole school framework based on Seligman’s (2011) PERMA model of flourishing to measure well-being within a school environment (White 2014).

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We have three specific objectives. First, drawing on recent advances in the field of positive psychology, we present a framework for measuring positive well-being within the school environment. A distinction of this chapter is that we use a *dashboard approach*, in which well-being is defined, measured, and reported across multiple domains (Forgeard et al. 2011; Seligman 2013). Second, we apply this multi-dimensional well-being framework to one of Australia's leading independent boys' schools, St. Peter's College, Adelaide (SPSC). The school has recently embraced well-being as one of its six core strategic goals. We present the vision, mission, strategy, and measurement of well-being at St Peter's College. Importantly, we include not only the students, but teachers and staff, as a *whole school approach to well-being*. Third, well-being matters to the extent that it leads to desirable outcomes. We examine associations between psychological well-being, physical health, and occupation-related outcomes, with the expectation that better profiles of well-being will relate to better outcomes.

A Positive Dashboard Approach to Well-being

It is fair to argue that opportunities for the health, safety, educational progress, and moral development of youth are universally desired (Cohen 2006; Land et al. 2001; Martens and Witt 2004). As such, high-level policy developments in student well-being have become a focus of international education policy, such as the inter-agency initiative between WHO, UNICEF, UNESCO, Education International, Education Development Center, Partnership for Child Development, and the World Bank's Focusing Resources for Effective School Health (www.freshschools.org). Similarly, the Melbourne Declaration on Education Goals for Young Australians (2008) notes: "Australian governments commit to working with school sectors to support all young Australians to become successful learners, confident and creative individuals, and active and informed citizens" (p. 8). There has been increasing recognition that contemporary schooling plays a vital role in developing academic ability, socio-emotional literacy, and personal character, motivating engagement in learning, and cultivating a general sense of well-being (Clonan et al. 2004).

Although schools can appear to outsiders to be somewhat resistant to change, in reality, they are dynamic institutions where students and educators seek to achieve common educational goals. The development of cognitive, functional, and social skills leads to successful careers and lives. However, some contemporary educational policies measure short- and long-term success completely in terms of academic performance (Murray-Harvey and Slee 2007; Van Petegam et al. 2008). For example, in Australia, recent trends in education policy highlight increasing attention to numeracy, literacy, and benchmarks linked to student achievement across the nation. In the U.S., the No Child Left Behind Act of 2001 required annual testing, report cards, evidence of academic process, qualified teachers, and dictated annual improvements (U.S. Department of Education 2001). In schools, the pressure to

achieve educational outcomes aligned against policy initiatives can unintentionally lead to achievement overriding well-being as the core educational ambition for all children. Although academic achievement is an important outcome, we suggest that increased recognition and effective measurement tools are needed to encourage educators to appreciate the significant role well-being plays in learning (Ferran 2011; Helliwell and Barrington-Leigh 2010).

A positive psychology perspective suggests that mental health is multidimensional and extends along a spectrum from extremely negative to extremely positive. Well-being is more than the lack of problems or dysfunction (Seligman and Csikszentmihalyi 2000), but traditionally has been measured from a disease standpoint. For example, in psychology, problem indicators such as depression, anxiety, bullying, and substance abuse are typically measured, rather than strengths such as hope, gratitude, perseverance, and self-control (Andrews and Ben-Arieh 2009). Clearly, negative outcomes should be monitored and reduced. However, Peterson and Park (2003) aptly note: “if our interest is in the good life, we must look explicitly at indices of human thriving” (p. 144). This key philosophical assumption drives our rationale.

Perhaps one of the greatest criticisms of positive psychology has stemmed from overemphasis of the term “happiness” as hedonic well-being (e.g., Held 2004; Lazarus 2003; Miller, 2008; Nausbaum 2012; Senior 2006). Fueled by the social media and pop culture books that have emphasized the need to be “happy”, positive psychology can appear like a feel-good superficial approach, far separated from the scientific rigor of fields like physics, biology, or even other areas of psychology. Some “well-being” programs developed for schools over the past 10 years that have focused solely on increasing positive emotion have further compounded this view (Waters 2011). Although we recognize that hedonic well-being is a core aspect of well-being, the positive psychology field has demonstrated an increasing emphasis on eudaimonic components (Diener et al. 2004). Well-being is distinct from positive thinking, which emphasizes constant positivity, as it recognizes that both positive and negative thinking are beneficial at different times (Seligman and Pawelski 2003). Well-being involves a subjective sense of thriving across multiple areas of life. Positive functioning is more than being a non-depressed, law-abiding citizen who is satisfied at maintaining the status quo; we want people to be healthy, vibrant, optimistic, compassionate, intellectually curious, and hopeful about the future.

Recently, positive psychologists have attempted to more clearly delineate the theoretical framework of well-being. Seligman (2011) suggested a framework of well-being in which flourishing is defined in terms of five components: *positive emotion, engagement, positive relationships, meaning* and purpose, and *accomplishment* or achievement (PERMA). Building upon the PERMA model, Kern et al. (2015) suggested a developmentally appropriate model of adolescent positive psychological function, comprised of five factors: engagement, perseverance, optimism, connectedness, and happiness (EPOCH). Similarly, Ryff and Keyes (1995) suggested six components of well-being. To address both positive and negative aspects of psychological function, Huppert and So (2013) suggested 10 flourishing

items that directly contrast with common depression and anxiety items. Likewise, Keyes' (2002) Mental Health Continuum captures positive and negative aspects of mental health. At the societal level, the Gallup organization has created a well-being index that includes life evaluation, emotional health, physical health, healthy behaviours, work environment, and basic access (Gallup 2009). The Organisation for Economic Cooperation and Development (OECD 2012) has created the *Your Better Life Index*, comprised of 11 topics considered essential to quality of life, which allows countries to identify the topics most important to them.

A core theoretical concept stemming from these models, with substantial implications for educational settings and pedagogy, is that well-being is best characterized as a profile of indicators across multiple domains, rather than as a single number. For instance, grade point average can provide some indication of a student's level of achievement overall, but obscures the fact that she excels in mathematics and is average in history. Just as students receive indicators of performance across multiple academic subjects, student well-being should be assessed and reported as a profile across multiple domains. Fig. 4.1 was created at St. Peter's College, with student input, to visually give meaning to the rather abstract notion of well-being, emphasizing a *dashboard approach* (Frey and Stutzer 2010; Seligman 2011; Stiglitz et al. 2009). For example, a person may need to 'dial up' their sense of meaning to promote well-being; at other times the person can seek to increase their positive emotions or further develop positive relationships.

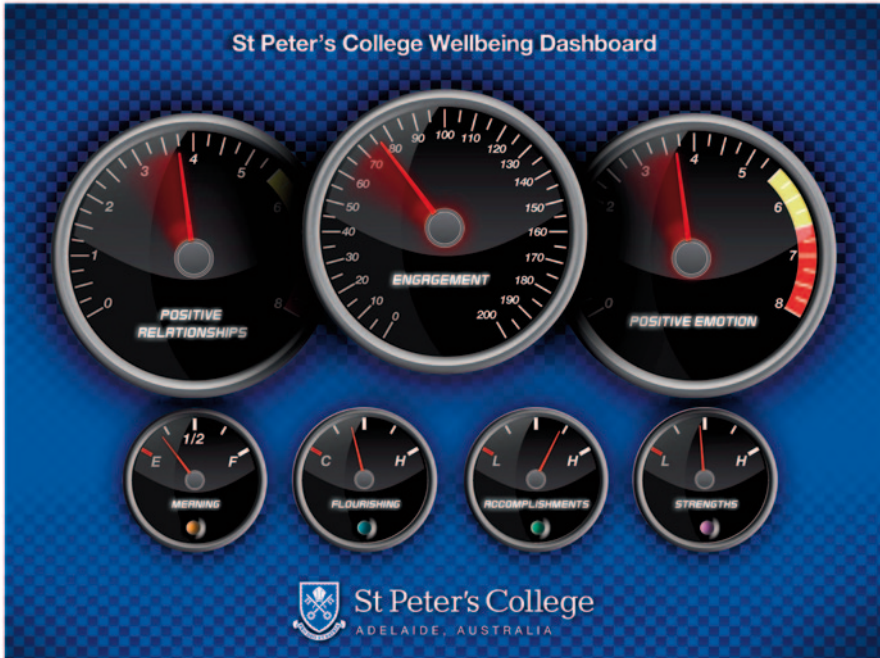


Fig. 4.1 The well-being dashboard (Waters and White 2012)

A Whole School Approach to Well-being: Incorporating Teacher and Staff Perspectives

Educational communities help prepare young people for challenges in the future. A recent review of positive education found that positive psychology interventions significantly increase students' hope, resilience, mindfulness, gratitude, and character strengths (Waters 2011). However, Kristjánsson (2012), Waters (2011) and White (2014), both critique positive education for its emphasis on isolated classroom-based interventions that focus on students alone, when the broader school environment and the surrounding community are also critical components to positive institutions (Noble and McGrath 2008; Noble and Wyatt 2008; Seligman and Csikszentmihalyi 2000; Waters et al. 2012). The field of positive organisational scholarship has placed strong emphasis on the research and application into employee well-being (Cameron 2003; Dutton and Sonenshein 2007), and Cameron and colleagues' organisational virtue model (Cameron et al. 2004; Cameron et al. 2011) is relevant to teacher and staff well-being.

In this chapter, we include not only a dashboard framework of well-being, but incorporate a whole-school approach. The perspectives and interests of students, teachers, and staff were included at the strategic planning and management level, and the entire school completed the well-being assessment. Enhancing and maintaining well-being "is a dynamic interactive process requiring engagement and creativity of individuals and communities" (Huppert and Willoughby 2010, p. 9); by including multiple perspectives, we can better engage and enhance the community as a whole.

Well-being and Life Outcomes

A main reason to focus on well-being in schools is to support healthy development and positive life outcomes (Seligman et al. 2009). For youth, self-esteem and positive emotions have been linked to physical health benefits (Hoyt et al. 2012) and academic achievement (Durlak et al. 2011; Nidich et al. 2011). Meaningful relationships with adult figures can buffer against negative outcomes such as depression, gang membership, juvenile delinquency, and substance abuse (Hamre and Pianta 2001). Student engagement in all aspects of school life is highest when students feel challenged and feel that their skills and strengths are being used (Shernoff et al. 2003). Happy teenagers earn substantially more money than less happy teenagers 15 years later in life (Diener et al. 2002). These benefits are important when we consider what role schools should play to best equip students for the challenges and opportunities they will face in the twenty-first century.

Similarly, in adults, positive affect is associated with less divorce, greater educational and occupational success, stronger friendships, and better health outcomes (Howell et al. 2007; Lyubomirsky et al. 2005; Patton et al. 2011; Pressman and Cohen 2005). Numerous reviews and meta-analyses indicate that well-being, broadly construed, relates to better health and longer life, although numerous issues remain

(Diener and Chan 2011; Friedman and Kern 2014). Employee life satisfaction relates to job satisfaction and work engagement (Cotton and Hart 2003; Parker and Martin 2009). Psychological well-being relates to job satisfaction, job performance, organisational commitment, and less turnover intentions (Cropanzano et al. 1193; Cropanzano and Wright 2001; Judge et al. 2001; Wright and Cropanzano 2000, 2004). Further, when school personnel have high levels of social and emotional well-being, this has a positive influence on the students (Jennings and Greenberg 2009).

Applying the Whole School Dashboard Approach to St. Peter's College

Established in 1847, St Peter's College, Adelaide, is a leading independent Anglican day and boarding school that offers "an exceptional education that brings out the best in every boy", from Pre-school to Year 12. The school includes over 1300 students age three to 18 years old, and 230 teachers and staff. With a strong commitment to social justice and building character, amongst her alumni are three Nobel Laureates, 42 Rhodes Scholars, and eight South Australian Premiers.

In 2011, St Peter's College, Adelaide strengthened its pastoral care model to embrace well-being as a goal in its new strategic direction, organized around the PERMA model. Under the direction of Simon Murray, Headmaster, and endorsed by the School Council, St Peter's College has systematically adopted a systems change approach throughout the strategic plan of the school to achieve its mission and vision to be a "world class school where boys flourish". St Peter's College has engaged the advice and feedback of global leaders in positive psychology, well-being and organisational change from around the globe. The school has invited internationally recognized thought leaders to deliver public lectures and raise community consciousness about well-being, including Patrick McGorry AO, Felicia Huppert, and Martin Seligman (See Appendix 1 for a full list of speakers).

The school aims to create a school culture that allows all students and staff to seek out and experience positive emotions, engagement, positive relationships, meaning, and accomplishment, and has planned various activities and interventions targeted at promoting the psychological well-being of students, teachers, and staff (Waters et al. 2012). Notably, the school is committed to documenting and assessing the impact of their efforts. The school's culture is especially strong in the scientific tradition, and so an evidence-based approach has been welcomed from the outset and supported throughout the school from teachers and students alike.

Our Approach

In this chapter, we first report the student and staff baseline measurement strategy. Second, we present a snapshot of the School's well-being using the whole school dashboard approach, aligned to Seligman's (2011) PERMA framework. Third, we

test cross-sectional relations between the PERMA well-being pillars and physical health and job satisfaction and organisational commitment. Flourishing is more than the lack of negative psychological states (Seligman and Csikszentmihalyi 2000), so we expected that the PERMA components would be protective over and above the negative impact of negative mental states. Specifically, we hypothesized that:

1. Students with higher psychological well-being would report better physical vitality and fewer somatic symptoms, even after accounting for negative affect.
2. Staff with higher psychological well-being would report better physical health, as well as greater job satisfaction and organisational commitment, even after accounting for negative affect.
3. Although we expected all five well-being components to relate to better health and job outcomes, we further predicted that the pattern of correlations between the different well-being components and physical health and job satisfaction would vary in strength, providing support for the dashboard approach.

Method

Participants

Over a five-day period in November 2011, pastoral time at St Peter's College, Adelaide was scheduled to allow students in years eight through eleven to complete a questionnaire online using SurveyMonkey software. To allow for follow-up and linkage in the future to other sources of data (e.g., academic), responses were assigned a random id number, and an onsite data manager will perform subsequent linkages to academic and other school records, thus maintaining student confidentiality from the School or other agencies. Five hundred sixteen students (all male) completed the survey, with 514 complete responses received. Students were relatively evenly distributed across the grades, with 134 students in year eleven, 145 in year ten, 116 in year nine, 118 in year eight, and three unknown. Twenty percent (105 students) were sons of an Old Scholar, and 53.1% (274 students) had at least one relative attend the school. About half the sample (49.6%) was non-religious, 21.5% Anglican, 14.3% Catholic, 5.4% Greek Orthodox, 2.5% Buddhist.

In January 2012, school employees were invited via email to complete the online assessment at their convenience anonymously using SurveyMonkey software. One hundred forty-eight staff completed the staff survey (73 male, 74 female, 1 unknown), with 143 complete responses. The survey did not include demographic questions, but the sample included junior and senior schoolteachers, administrators, secretarial staff, and grounds and maintenance employees.

Measures

The impact of the well-being survey was an important vehicle to engage the population in re-defining well-being. Our conceptual model was first envisaged by Waters and White (2012a; 2012b; 2012c), developed with feedback by Seligman, and refined in consultation with all key Senior and Junior School pastoral staff and a group of senior students. From the outset, White consulted a group of 20 student volunteers, age 16–17, using an appreciative inquiry 4-D technique (Cooperrider and Whitney 2005), and asked what they wanted to know about their own well-being. After the questionnaire was developed, thirteen students from the school participated in a focus group, in which questions were discussed and further refined. A similar consultation model was adopted with key pastoral staff from Early Years to Senior School, asking what staff would be interested in learning about the boys' well-being during pastoral care meetings. This enabled open dialogue with staff members about PERMA and what types of questions could be asked of the students. All Heads of House were provided with copies of *Flourish* (Seligman 2011) and attended a number of the guest lectures focusing on well-being from a number of international experts. The resulting questionnaires were a comprehensive compilation of items and measures with student and staff input, aligned with contemporary well-being theory.

At the time, no single brief measure existed to measure PERMA for adolescents or adults. Kern and colleagues (2012) and Butler and Kern (2012) have since developed such measures, and items were included in the current assessment to help develop these measures, alone and in comparisons with other theoretically relevant scales and measures. Thus, part of the assessment was used to help develop brief measures that can be used to assess PERMA in future assessments. Figure 4.2 summarizes the measures included in the student and staff questionnaires, in relation to how they fit into the PERMA model. Items assessing negative affect, self-reported health, and job outcomes (for staff) were included.

Student Questionnaire The EPOCH measure of adolescent flourishing is a new measure of PERMA for adolescents (Kern et al. 2015). Engagement, connectedness (relationships), and happiness (positive emotion) align directly with the PERMA model. Optimism and perseverance are included as developmentally appropriate precursors of developing meaning and accomplishment in adulthood. A confirmatory analysis was evaluated, with five items per factor and oblique rotation. The data adequately fit the model (RMSEA = 0.064 (90% CI = 0.059, .069), SRMR = 0.051). The factors were correlated, but could be separated. Items were averaged to created composite scales (engagement: $\alpha = 0.68$; perseverance: $\alpha = 0.83$, optimism: $\alpha = 0.77$, connectedness: $\alpha = 0.78$, happiness: $\alpha = 0.86$).

The Healthy Pathways Child Report Scales (Bevans et al. 2010) are a set of unidimensional measures that assess aspects of health, illness, and well-being in clinical and population-based research studies involving youth in transition from childhood to adolescence. Although designed for children age 12 and under, many of the scales may still be relevant to adolescents. We included the somatic symptoms

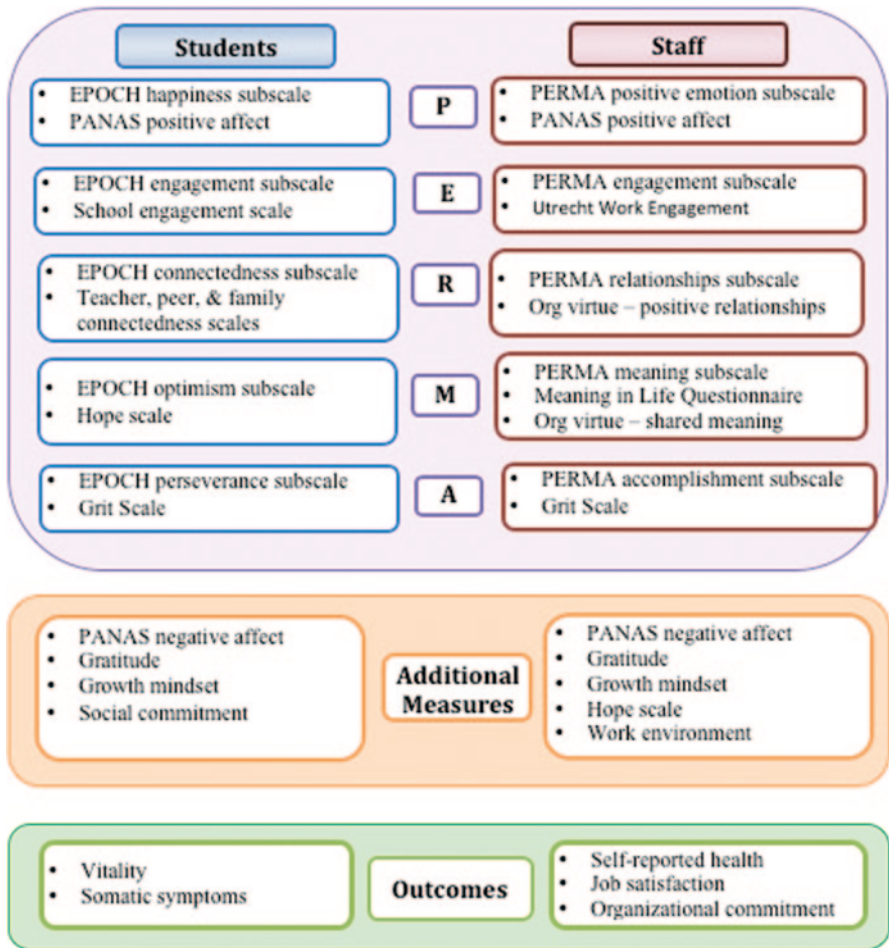


Fig. 4.2 Measures included in the student (left) and staff (right) assessments, conceptually aligned to the PERMA model

(4 items, $\alpha=0.72$), physical vitality (4 items, $\alpha=0.81$), and school engagement (4 items, $\alpha=0.83$) scales.¹

A series of additional measures were included to further address the PERMA components. The Positive and Negative Affect Schedule for Youth (Laurent et al. 1999) includes positive and negative emotions felt over the past month (e.g., happy, scared, miserable, proud; 1 = never, 5 = always). Items were averaged to create

¹ Teacher, parent, and peer connectedness scales were included. Due to an error in administration, these items were not presented to the students; thus, convergence with the EPOCH connectedness scale could not be tested.

separate positive (15 items, $\alpha=0.91$) and negative (15 items, $\alpha=0.91$) affect scales. The Gratitude Questionnaire (McCullough et al. 2002) assesses stable tendencies to experience gratitude in daily life (e.g., “I have so much in life to be thankful for”; 1 = not at all, 5 = very much; 4 items,² $\alpha=0.85$). Items assessing stable tendencies to persevere through difficulties (e.g., “I have overcome setbacks to conquer an important challenge”; 6 items, $\alpha=0.80$) were included from the 12 item Grit Scale (Duckworth et al. 2007)³. The Children’s Hope Scale (Snyder et al. 1997) assesses the construct of hope, defined in terms of agency and pathways (e.g., “I think the things I have done in the past will help me in the future”; 1 = not at all, 5 = very much; 6 items, $\alpha=0.84$). The Growth Mindset scale (Dweck 2006) assesses the extent to which individuals believe their mindsets are fixed versus open to growth and experience (e.g., “You have a certain amount of intelligence, and you really can’t do much to change it”; 1 = strongly disagree, 4 = strongly agree; 6 items, $\alpha=0.87$). The social commitment subscale of Greenberger’s psychosocial maturity measure assesses orientations toward contributing to social interests versus self or familial interests (Greenberger et al. 1975; McGuire and Gamble 2000). Nine items were included as an indicator of how much the community means to the student (e.g., “I would rather use my free time to enjoy myself than to help raise money for a neighborhood project”; 1 = strongly disagree, 4 = strongly agree; 9 items, $\alpha=0.62$).

Staff Questionnaire Butler and Kern (2015) have developed a brief measure of PERMA for adults. At the time of the study, the measure was not available, but we selected 15 face valid items from their item bank as a brief measure of PERMA. Items were averaged to create composite scales (positive emotion: $\alpha=0.95$; engagement: $\alpha=0.62$; relationships: $\alpha=0.75$; meaning: $\alpha=0.77$; accomplishment: $\alpha=0.62$).⁴

Mirroring the student questionnaire, adult versions of several well-being measures were included.⁵ Scales included the eight item Grit Scale (Duckworth and Quinn 2009, $\alpha=0.74$), the Gratitude Questionnaire (McCullough et al. 2002; 6

² The original scale includes six items. The two reverse-coded items were not consistent with the other items (6 item $\alpha=0.64$), suggesting a problem with the reversed format structure in this sample. As the questionnaire was lengthy and reasons for the unreliability are unknown, we focused on the four consistent items.

³ The original scale includes two components, perseverance, and consistency of interests, which are then combined into a single 12 item composite. The consistency items are reverse scored, such that the two factors should be negatively correlated. In this sample, the two factors were positively correlated, again suggesting a problem with the reverse-coded structure. We thus focused on the perseverance component.

⁴ Factor analysis suggested items loaded on two distinct factors representing hedonic and eudaimonic components of well-being, rather than the five hypothesized factors. As few items were available, we proceeded with the five hypothesized factors, but note the lower reliabilities for the engagement and accomplishment facets. Future assessments will use the refined measure of PERMA, which has stronger psychometric properties.

⁵ The reversed-scale items were not a problem in the adult sample.

items, $\alpha=0.75$), the Positive and Negative Affect Schedule (Watson et al. 1988; positive affect: 10 items, $\alpha=0.89$; negative affect: 10 items, $\alpha=0.87$); the Hope Scale (Snyder et al. 1996; 6 items, $\alpha=0.81$); and the Growth Mindset scale (Dweck 2006; 6 items, $\alpha=0.92$). In addition, the Meaning in Life Questionnaire (Steger et al. 2006) assessed the presence of and the search for meaning (e.g., “My life has a clear sense of purpose”; 10 items, $\alpha=0.88$).

In line with the cultural objectives outlined in the St Peter’s College, Adelaide, Strategic Plan 2012–2015, several measures focused on the work environment. Eight items were adapted from Cameron et al. (2011) to assess the organisational climate (e.g., “St Peter’s College demonstrates and fosters trust and integrity among employees”; 8 items, $\alpha=0.97$). The Utrecht Work Engagement Scale (Schaufeli et al. 2006; Schaufeli et al. 2002) assesses engagement in and enjoyment of work (e.g., “At my job I feel strong and vigorous”; 9 items, $\alpha=0.89$). The Organizational Virtuousness Scale (Cameron et al. 2011) was designed to assess positively deviant, affirming, and virtuous practices within an organisation (e.g., “We treat each other with respect”; “We share enthusiasm with one another”). The original measure assessed six areas: caring, forgiveness, inspiration, meaning, respect, and compassionate support. After combining the items, an exploratory factor analysis indicated two higher order dimensions: one reflecting positive relationships with coworkers (respect, forgiveness, and compassionate support, $\alpha=0.89$), and the second reflecting a sense of shared meaning (meaning, inspiration, and caring, $\alpha=0.95$).

Two measures were used as work-related outcomes. The Index of Job Satisfaction (Brayfield and Rothe 1951) assesses subjective perspectives on work (e.g., “I find real enjoyment in my job”; 6 items, $\alpha=0.75$). The Organizational Commitment Scale (Mowday et al. 1979) assesses employee identification with and commitment to the work organisation (e.g., “I am proud to tell others that I am part of this organisation”; 8 items, $\alpha=0.88$).

Participants indicated self-perceived health, energy, fitness, and how much they were bothered by seven symptoms (cough, pain, tight chest, dizziness, trouble moving around, cold/flu, and other). Symptom items were reversed and then the health items were averaged to create a general self-reported health score (13 items, $\alpha=0.81$).

Data Analyses

The main analysis goals were to apply the whole school dashboard framework to St Peter’s College, Adelaide students and staff by creating a baseline well-being profile snapshot of student and staff well-being at the school, and then to examine relations between the well-being elements and self-rated health and job satisfaction. For comparison and ease of presentation, mean scores were converted to a 0–1 scale (i.e., average percentage out of the maximum score on each scale), and then compiled graphically. Correlations amongst the measures were examined.

Finally, hierarchical linear regression tested the well-being components as predictors of physical vitality and somatic symptoms for students, and self-rated health, job satisfaction, and organisational commitment for staff, controlling for negative affect. Analyses were performed using SPSS (version 20) software.

Results

Descriptive and Measure Validity

Descriptive information and correlations between each scale and the EPOCH or PERMA factors are summarized in Table 4.1. For students, convergent relations were somewhat supported. The EPOCH engagement scale correlated $r=0.56$ with the Healthy Pathways school engagement scale; EPOCH perseverance correlated $r=.78$ with the Grit scale; EPOCH optimism correlated $r=.75$ with the Hope scale, and EPOCH happiness correlated $r=.71$ with PANAS positive affect. For staff, the PERMA meaning factor correlated $r=.55$ with Steger et al.'s Meaning in Life scale, and PERMA engagement correlated $r=.56$ with the Utrecht work engagement measure. However, other measures did not show consistent convergent and divergent relations. For example, the PERMA positive emotion component correlated $r=0.57$ with PANAS positive affect, and correlations with engagement, meaning, and accomplishment were stronger ($r=0.63-0.64$).

Applying the Whole School Dashboard Approach

To apply the dashboard framework described above, we visually mapped average responses across measures. Figure 4.3 provides dashboard profiles of student and staff responses across the measures. In the first image (top), the mean average percentage score for each scale are displayed, with values falling above or below the middle response on the respective scale (e.g., 3 on a 1 to 5 scale). Both students and staff demonstrate a positive profile, with scores above .50 on positive measures, and below .50 on negative measures (i.e., negative affect, somatic symptoms). In the second image (right), the average score, normalized to a 0 to 1 metric, is plotted for each measure. For students, the EPOCH perseverance and Grit scale perseverance factor show a similar pattern, as do the EPOCH optimism and the Hope scale, and the EPOCH happiness and the Gratitude questionnaire score. Somatic symptoms and negative affect show an indented pattern.

Table 4.1 Descriptive information and correlational associations for students (EPOCH measure, $N=514$) and staff (PERMA-Profilr, $N=143$)

<i>Students</i>									
	M	SD	Min	Max	E	P	O	C	H
EPOCH engagement	3.52	0.66	1.00	5.00	1.00				
EPOCH perseverance	3.48	0.77	1.00	5.00	.59**	1.00			
EPOCH optimism	3.51	0.68	1.00	5.00	.61**	.70**	1.00		
EPOCH connectness	4.22	0.66	1.00	5.00	.46**	.47**	.55**	1.00	
EPOCH happiness	3.99	0.74	1.00	5.00	.47**	.52**	.63**	.69**	1.00
School engagement	3.04	0.77	1.00	5.00	.56**	.54**	.53**	.37**	.38**
Positive affect	3.62	0.64	1.00	5.00	.49**	.52**	.65**	.54**	.71**
Negative affect	2.19	0.68	1.00	4.93	-.14**	-.23**	-.31**	-.28**	-.37**
Gratitude	4.04	0.77	1.00	5.00	.54**	.50**	.56**	.65**	.62**
Grit	3.62	0.69	1.00	5.00	.56**	.78**	.66**	.45**	.49**
Hope	3.79	0.71	1.00	5.00	.63**	.69**	.75**	.52**	.57**
Growth mindedness	2.94	0.62	1.00	4.00	.28**	.35**	.33**	.23**	.28**
Social commitment	2.32	0.38	1.00	4.00	-.05	-.06	-.07	-.09*	-.08
Somatic symptoms	2.09	0.81	1.00	5.00	-.12**	-.12**	-.12**	-.19**	-.18**
Vitality	3.62	0.81	1.00	5.00	.25**	.37**	.48**	.33**	.49**
<i>Staff</i>									
	M	SD	Min	Max	P	E	R	M	A
PERMA pos. emotion	5.34	1.01	2.00	7.00	1.00				
PERMA engagement	5.49	0.63	3.00	6.33	.59**	1.00			
PERMA relationship	5.56	0.51	3.67	6.00	.41**	.49**	1.00		
PERMA meaning	5.57	0.67	3.33	6.33	.61**	.59**	.69**	1.00	
PERMA accomplishment	5.39	0.62	3.00	6.33	.71**	.68**	.52**	.73**	1.00
Grit	3.93	0.56	2.25	5.00	.08	.14	.19*	.22**	.25**
Gratitude	4.37	0.60	2.83	5.00	.51**	.41**	.49**	.50**	.45**
Positive affect	3.98	0.43	2.80	5.00	.57**	.64**	.44**	.63**	.63**
Negative affect	2.17	0.53	1.00	3.60	-.50**	-.33**	-.26**	-.42**	-.50**
Hope	4.02	0.57	2.33	5.00	.42**	.49**	.43**	.53**	.57**
Growth	2.76	0.58	1.00	4.00	.10	.21*	.16	.26**	.27**
Meaning	4.94	1.03	2.30	7.00	.33**	.30**	.39**	.55**	.43**
Work environment	4.97	1.35	1.00	7.00	.40**	.43**	.27**	.31**	.39**
Work engagement	3.06	0.44	1.67	4.00	.44**	.56**	.24**	.46**	.56**
Work relationships	5.15	1.11	1.57	7.00	.39**	.45**	.30**	.32**	.38**
Work shared meaning	5.34	1.02	1.85	7.00	.38**	.49**	.29**	.34**	.39**
Job satisfaction	3.87	0.61	1.00	5.00	.51**	.47**	.17*	.37**	.54**
Org. commitment	3.95	0.64	1.67	5.00	.38**	.43**	.25**	.31**	.46**
Physical Health	5.51	0.63	3.92	6.62	.33**	.35**	.23**	.43**	.42**

* $p < .05$, ** $p < .01$

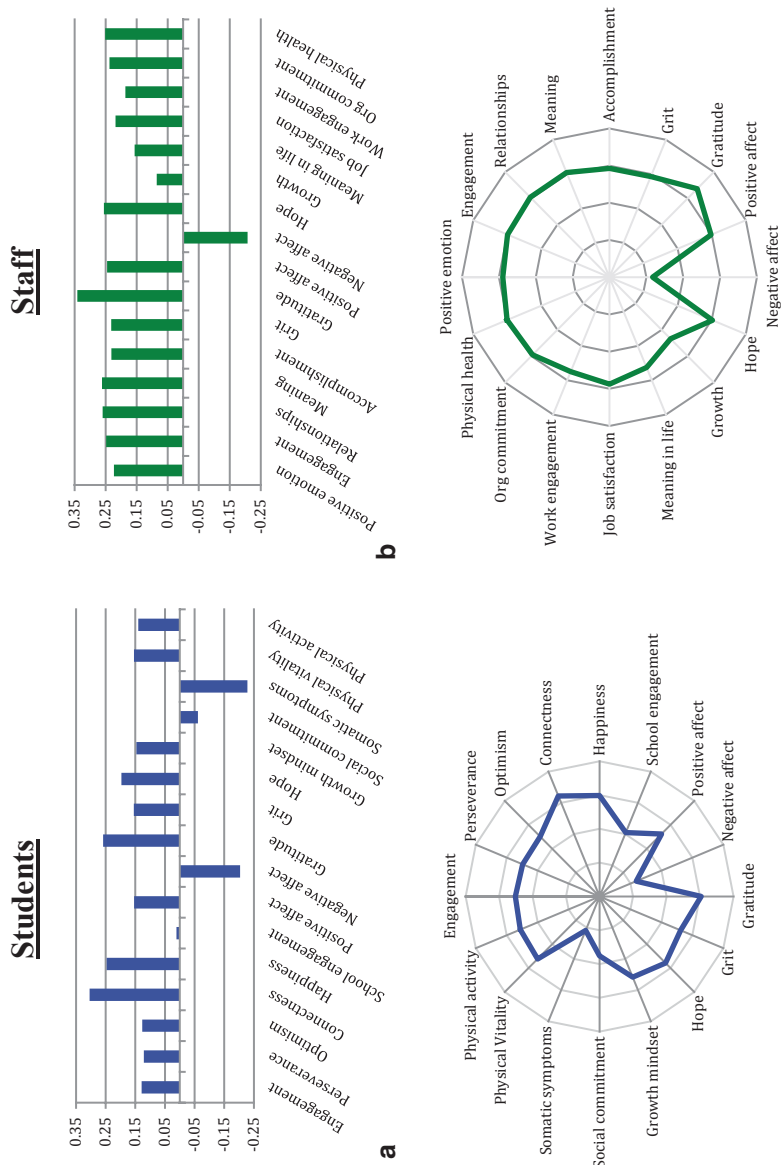


Fig. 4.3 Two profile representations of student and staff well-being across the measures **a** Students. **b** Staff

Well-being, Physical Health, and Job Relations

Student Well-Being and Health To test hypothesis 1, we examined student well-being in relation to physical vitality and somatic symptoms. As predicted, correlations indicated that all five EPOCH components were positively related to physical vitality and negatively related to somatic symptoms (Table 4.1). Regression results are summarized in Table 4.2 (top). The EPOCH components explained 21.4% of the variance in vitality, and 1.4% of the variance in somatic symptoms. After accounting for negative affect, optimism and happiness were related to greater physical vitality ($\beta_{\text{optimism}}=0.29, p<.001$; $\beta_{\text{happiness}}=0.33, p<.001$), whereas engagement, perseverance, and connectedness were not significantly related. Negative affect related to greater somatic symptom reporting ($\beta=0.44, p<.001$). Although each component was correlated with fewer symptoms, after accounting for negative affect, the EPOCH factors were no longer significantly related to somatic symptom reports.

Staff Well-Being, Health, Job Satisfaction, and Organisational Commitment To test hypothesis 2, we examined staff well-being in relation to health and job outcomes. As expected, correlations affirmed that the five PERMA components were positively related to better self-rated health, higher job satisfaction, and greater organisational commitment. Regression results are summarized in Table 4.2 (bottom). The PERMA components explained 15.6% of the variance in self-reported health, 21.0% of the variance in job satisfaction, and 15.3% of the variance in organisation commitment. After accounting for negative affect, higher levels of meaning related to higher self-rated health ($\beta=0.32, p=0.02$). Engagement and accomplishment significantly related to greater reported job satisfaction ($\beta_{\text{engagement}}=0.22, p=0.03$; $\beta_{\text{accomplishment}}=0.31, p=0.02$) and organisational commitment ($\beta_{\text{engagement}}=0.23, p=0.03$; $\beta_{\text{accomplishment}}=0.30, p=0.03$).

Differential Relations by Well-Being Component Our third hypothesis was that relations between well-being and health or job outcomes would vary depending upon the component, thus supporting using a dashboard approach. For comparison, a single well-being composite score was computed as the mean of the five EPOCH or PERMA values, and regression analyses predicted health and job outcomes, accounting for negative affect. For students, the composite well-being factor accounted for 15.6% of the variance in physical vitality, and 1% of the variance in somatic symptoms. Well-being related to greater physical vitality ($\beta=0.42, p<.001$), but was not significantly related to somatic symptoms ($\beta=-0.04, p=0.33$). The individual components provided greater detail, indicating that relations were primarily driven by optimism and happiness.

For staff, the well-being factor explained 11.8% of the variance in health, 13.1% of the variance in job satisfaction, and 10.7% of the variance in organisational commitment. After accounting for negative affect, well-being consistently predicted better outcomes (health: $\beta=0.40, p<.001$; job satisfaction: $\beta=0.42, p<.001$; organisational commitment: $\beta=0.38, p<.001$). Again, the individual components

Table 4.2 Regression analyses predicting health and job outcomes by the EPOCH (students) or PERMA (staff) components, controlling for negative affect

	β	t	β	t	β	t
<i>Students</i>						
	Physical Vitality		Somatic symptoms			
Negative affect	-0.13	-3.23**	0.44	10.31**		
Engagement	-0.10	-1.95	-0.09	-1.77		
Perseverance	0.07	1.23	-0.02	-0.30		
Optimism	0.29	4.79**	0.11	1.73		
Connectedness	-0.08	-1.49	-0.10	-1.81		
Happiness	0.33	5.75**	0.04	0.67		
<i>Staff</i>						
	Physical Health		Job satisfaction		Organization commitment	
Negative affect	-0.05	-0.55	-0.15	-1.91	-0.14	-1.58
Positive emotion	-0.02	-0.17	0.17	1.69	0.05	0.42
Engagement	0.10	0.94	0.22	2.26*	0.23	2.21*
Relationships	-0.15	-1.38	-0.20	-2.05*	0.03	0.26
Meaning	0.32	2.45*	-0.02	-0.14	-0.15	-1.20
Accomplishment	0.18	1.35	0.31	2.48*	0.30	2.27*

* $p < .05$, ** $p < .01$

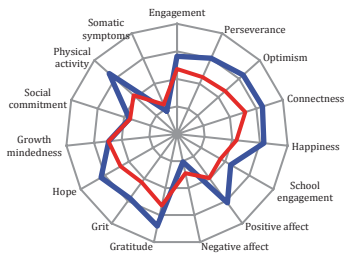
provided greater detail, indicating that the health relations were driven by meaning, whereas job satisfaction and organisational commitment were driven by engagement and accomplishment.

Figure 4.4 compares the well-being profile for the lowest tertile compared to the highest tertile responses on student vitality, student somatic symptoms, staff self-rated health, staff job satisfaction, and staff organisational commitment. Healthy students reported higher engagement, perseverance, optimism, and happiness. They were more hopeful and grateful, and reported fewer somatic symptoms. Healthy staff reported greater meaning and accomplishment. Satisfied staff reported higher positive emotion, greater work engagement, commitment to the school, and better relationships with co-workers. Individuals with high organisational commitment showed few differences across the domains, with average scores around 80 (standardized 0–1 scale). In contrast, less committed individuals varied across the domains, with comparatively lower reports of engagement, meaning, accomplishment, and positive emotion.

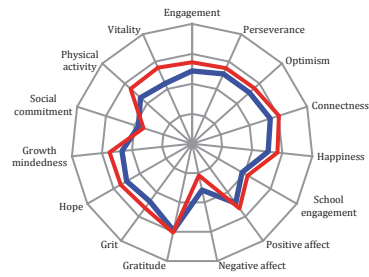
Discussion

The measures and assessments that are completed by teachers and students each year contribute to the implicit norms and values of the school’s culture, as action is impacted by measurement (Stiglitz et al. 2009). Just as multiple components are

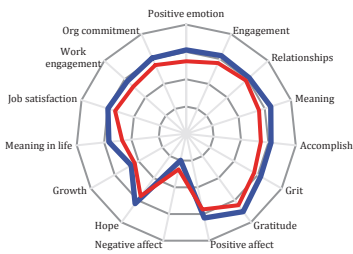
A) Students: low vs. high physical vitality



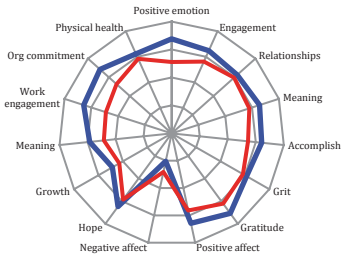
B) Students: low vs. high somatic symptoms



C) Staff: low vs. high self-rated health



D) Staff: low vs. high job satisfaction



E) Staff: low vs. high organizational commitment

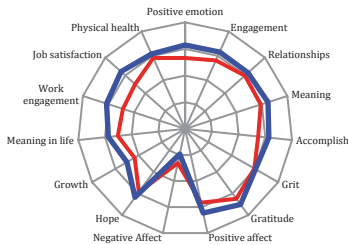


Fig. 4.4 Well-being profiles and life outcomes, comparing students and staff high and low on health, job satisfaction, and organizational commitment, based on tertile splits

necessary to define and understand academic performance, we suggest that school assessments can benefit from including a profile of well-being indicators. We applied this dashboard perspective to consider whole scale well-being at St. Peter’s College, Adelaide. The school is committed to cultivating a flourishing culture for the students, staff, and ultimately the broader community. The St Peter’s College leadership team has prioritized quantitatively documenting levels of and changes in student and staff well-being over the next few years.

This is the first study to systematically and empirically apply the PERMA model with a dashboard approach to whole-school well-being. It is the first to report on the measurement of PERMA as it is applied to the development of a strategic intention of an educational institution or organisation. This study offers a baseline snapshot of the psychological functioning of the school as aligned to its mission and vision, with relations to self-reported physical health for students and staff, and job satisfaction and organisational commitment for staff.

A Dashboard Perspective on Student Well-being

Students who reported higher engagement, perseverance, optimism, and happiness had higher levels of vitality, and students who were more hopeful and grateful reported fewer somatic symptoms. The results of our study, along with other evidence linking positive well-being and physical health (e.g., Diener and Chan 2011; Howell et al. 2007; Pressman et al. 2010; Veenhoven 2008) suggest that St. Peter's College may be able to promote the physical health of their students by investing in programs that promote positive psychological states, such as *BouceBack!* (Noble and McGrath 2012), Boniwell and Ryan's (2012) *Personal Well-Being Lessons for Secondary Schools*, and the *Penn Resiliency Program* and *Strath Haven positive psychology* curriculum (Seligman et al. 2009). Of course, our results are cross sectional and it may be that the causal direction is one in which physical fitness promotes psychological well-being, or that both feed into each other. Still, the traditional use of fitness programs and physical education instruction at schools can be bolstered by the inclusion of well-being curriculum.

Whereas global measures leave little guidance on how to proceed, the greater specificity provided by the PERMA domains are potentially more informative (Diener 2006). For example, if a boy reports low satisfaction with life, we can try a number of general well-being interventions to breed satisfaction. But if he indicates that he is bored or has low engagement with his classes, then we can intervene to increase his interest in class with activities such as goal setting and building character strengths, which may increase life satisfaction as a by-product of the targeted intervention. If a student scores low on relationships, the school can assist through school buddy-peer programs, through senior-junior students mentoring, or by altering a few key teachers to deliberately cultivate positive relationships with that student. Similarly, specific measures of hope and growth mindsets can be used to design goal-setting programs to assist students to achieve academically, on the sports field and in other extra curricula activities such as music or social service programs.

A dashboard approach summarizing responses across groups or classrooms has particular potential when considering developing whole school approaches to well-being. In many cases, schools programs meant to develop student well-being can be narrow in focus and appear to centre only on classroom interventions, overlooking the multifactorial aspects of school life. Further, a dashboard makes what is 'in-

visible’ or ‘intuitive’ in so many school settings—commonly referred to as school ‘tone’ or ‘feeling’—transparent to members of the school community. Qualitative reports from the St Peter’s College community support the value of using a systematic approach to well-being measurement across the whole school community.

A Dashboard Perspective on Staff Well-being

In the current study, staff with higher levels of well-being reported better health, even after controlling for negative affect. However, when considered by component, only one well-being indicator—a sense of meaning—was predictive. Although growing evidence supports a positive association between well-being and physical health, the type of well-being under consideration may matter, but few studies have simultaneously compared multiple aspects (Boehm and Kubzansky 2012; Diener and Chan 2011). Likewise, staff members who reported positive relationships with co-workers, a shared sense of meaning, and feelings of accomplishment had greater job satisfaction. The hypothesis that happy workers are more productive workers has received mixed support, due in part to inconsistent measures of “happiness” and lumping all types of well-being (including depression and burnout) together (Cropanzano and Wright 2001; Wright and Cropanzano 2004). Job satisfaction relates to better performance, but may be moderated by positive affect and other aspects of well-being (Judge et al. 2001; Wright et al. 2007). The dashboard perspective may help disambiguate discrepant findings.

Staff members with the highest levels of organisational commitment were those with a sense of engagement at work and a sense of accomplishment. Haase et al. (2012) suggest that positive affect motivates individuals to invest time and energy into educational and occupational goals. Positive emotion may foster motivation and engagement, reflected by greater commitment to the organisation, with subsequent better performance. Hattie (2009) asserts that teacher efficacy is one of the critical factors in determining student engagement and lifelong learning. Efforts to cultivate engagement, meaning, relationships, and accomplishments may help staff members to feel connected to the school, with greater student well-being and achievement as desirable by-products. The dashboard approach, thus, provides important information to the School’s Leadership Team and Human Resource Manager about the specific avenues needed to be built in order to promote different aspects of work well-being and physical health.

Limitations

We have presented a single measurement strategy. All data were self-reported. Future assessments will benefit from linking the student reports to objective outcomes, such as health records, grades, and test scores. As no validated measures of PERMA

existed at the time, we included two measures that are under development, along with a series of other measures meant to capture the different PERMA components. There was some evidence of convergent validity, particularly in the youth survey. Reliability was weaker for the staff PERMA items, and convergent validity was unclear. Subsequent assessments will benefit from the more reliable items that are now available (Butler and Kern 2015). Despite these measure limitations, the findings presented here offer additional validating information for these measures. Finding brief but reliable measures is particularly important to maintain student engagement in subsequent assessments.

Hattie (2009) has developed a system for using assessments to guide learning (see Hattie 2012; Hattie and Timperley 2007). Scores are visibly presented, with information about how one compares to others, what achievement at a higher level would look like, and tools for change. Well-being measurement needs a similar system. The current assessment offers a preliminary step in moving toward such a system, but at this point only gives a metric for comparison and could prove an important contribution in the development of a viable approach to well-being. Subsequent efforts at St Peter's College, Adelaide will develop positive pedagogy, based on evidence-based methodology.

Conclusion: A Vision for a Positive Future

To what extent should this assessment impact policies or procedures at the school or elsewhere? At this point, the assessment and our presentation here give little guidance. The information provided by this assessment offers a baseline indication of the School's well-being. It appears that the School on average is already doing relatively well compared to population averages on multiple dimensions of well-being. On the one hand, an important goal moving forward will be to maintain high levels of well-being in the years to come. However, within the averages, there remains individual variation, and there is value in determining how individual measures and reporting of information can be used to cultivate well-being for every individual at the School. If St Peter's College is to become a world-class school where boys flourish and develop lifelong resilience, the creative potential of its community members is unlocked, and the school as a whole thrives, monitoring the well-being of its community is vital.

St. Peter's College is actively embedding well-being into all components of its institution, from the classroom, to music, to staff training, to counselling, to health care, and to the playing fields (Waters et al. 2011). The Senior Leadership Team has been trained in positive psychology with experts from the University of Melbourne; 150 employees have been trained in an executive positive psychology program delivered by the University of Pennsylvania; and a senior staff member has completed the University of Pennsylvania's Masters in Applied Positive Psychology. A large positive psychology interest group has formed at the school. An Appreciative Inquiry summit was conducted with the whole staff, with impressive reports of benefit

and engagement. The school has presented its well-being practice and research at several internal peer-reviewed conferences (Barbieri et al. 2012; Waters et al. 2011; 2012; White et al. 2012) and has made these publically available on the school's website (www.stpeters.sa.edu.au). St Peter's College, Adelaide will teach Positive Education through stand-alone courses on positive psychology to infuse academic courses, pastoral counselling, and extracurricular activities with positive psychology, and to empower students and staff to live flourishing lives beyond the time and space boundaries of the School (cf. Chap 7). By the end of 2015, over 2,400 students will complete one or more well-being and positive psychology interventions. We wait with anticipation to see the contribution they will make to create a better world for all.

Schools play a critical socialization role in establishing and maintaining positive cultural values, as many students and staff spend much of their time in the school environment. Educational outcomes are typically determined by tests and achievements, while subjective perspectives must come from the students and staff themselves. By directly assessing subjective perspectives of well-being across multiple domains, there is potential to change the focus and conversation toward wellness promotion at all levels in the education system.

Appendix 1

International Thought Leaders that have Presented at St. Peter's College

Patrons:

Dr. Robin J Warren AC—Nobel Prize Winner and St Peter's College Old Scholar
Baroness Greenfield CBE—Professor of Pharmacology at Oxford University, a neuroscientist, writer, and broadcaster

Fellows 2011–2014:

- Professor Tanya Monro—ARC Federation Fellow, Director of the Institute for Photonics & Advanced Sensing (IPAS), Professor of Physics, The University of Adelaide
- Anthony Roediger—Boston Consulting Group Partner and Managing Director
- Professor Patrick McGorry AO—Executive Director of Orygen Youth Health
- Associate Professor Rufus Black—Master of Ormond College and Principal Fellow in the Department of Philosophy, The University of Melbourne
- Dr Michael Carr-Gregg—child and adolescent psychologist
- Professor Felicia Huppert—Professor Emerita of psychology and Founding Director of the Well-being Institute, University of Cambridge

- The Rev'd Professor Andrew McGowan—Warden, Trinity College, Joan F.W. Munro Professor of Historical Theology in the Trinity College Theological School, Melbourne,
- Professor Toni Noble—Australian Catholic University
- Professor Rob Moodie—Professor of Global Health at the Nossal Institute of Global Health at the University of Melbourne
- Associate Professor Lea Waters—Director of the Masters in School Leadership and Director of Positive Psychology Programs (undergraduate), Melbourne Graduate School of Education, The University of Melbourne
- Professor Michael Bernard—Professorial Fellow Melbourne Graduate School of Education, The University of Melbourne
- Professor Martin Seligman—The University of Pennsylvania
- Professor Peter Singer AC—Ira W. DeCamp Professor of Bioethics at Princeton University, and a Laureate Professor at the Centre for Applied Philosophy and Public Ethics at the University of Melbourne
- Associate Professor Jane Burns—Chief Executive Officer of the Young and Well CRC
- The Rev'd Dr Andreas Loewe—Chaplain, Trinity College, The University of Melbourne
- Professor James Haire AC—Director, Australian Centre for Christianity and Culture
- Professor Kent Anderson—Pro Vice-Chancellor (International), The University of Adelaide
- Professor James Arthur—Director Jubilee Centre for Character and Values, Head of the School of Education, University of Birmingham
- Brigadier General (retired) Rhonda Cornum PhD MD—Former Director of the US Army's Comprehensive Soldier Fitness
- Dr Michael Merzenich—Professor Emeritus of Neuroscience at the University of California, San Francisco
- Dr Paul Willis—Director of the Royal Institution of Australia
- Professor Glyn Davis AC—Vice Chancellor and Principal, University of Melbourne
- Professor Julio Licinio—Deputy Director Translational Medicine and Head, Mind and Brain Theme, South Australian Health and Medical Research Institute
- Professor David Lloyd—Vice Chancellor and President, University of South Australia

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