

Supplemental Materials
The EPOCH Measure of Adolescent Well-Being
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Table S1

EPOCH Item Bank and the Initial 25-Item and Final 20-Item Versions of the Measure

60 item	Question	25 item	20 item
Engagement			
E01	I feel alert.		
E02	I get completely absorbed in what I am doing.	E	E
E03	I love learning new things.		
E04	I am able to focus on things that I need to think about.		
E05	When I am learning something new, I lose track of how much time has passed.	E	E
E06	I feel passionate about the things that I enjoy doing.	E	
E07	It is easy for me to pay attention in class.		
E08	When I do an activity, I enjoy it so much that I lose track of time.	E	E
E09	I am interested in all kinds of things.		
E10	In my classes, I concentrate so hard that time passes quickly.	E	
E11	I get so involved in activities that I forget about everything else.		E
E12	I have hobbies or interests that really excite me.		
Perseverance			
P01	There are a lot of things that I want to accomplish in my life.		
P02	I am proud of myself.		
P03	I finish whatever I begin.	P	P
P04	I believe that I can do just about anything I set my mind to.	O	
P05	It is important to me that I do well in school.		
P06	Setbacks don't discourage me.		
P07	I feel determined to succeed at something.		
P08	I feel a sense of accomplishment from what I do.	P	
P09	I keep at my schoolwork until I am done with it.	P	P
P10	Once I make a plan to get something done, I stick to it.	P	P
P11	I complete things that are hard to do.		
P12	I am a hard worker.	P	P
Optimism			
O01	I am confident that I will get the kind of job I want to get.		
O02	I am optimistic about my future.		O

O03	Other students like me.		
O04	I believe that I will achieve my goals.	O	
O05	I think that good things are going to happen to me.	O	O
O06	I like the way that I look.		
O07	I am confident that I can overcome difficulties.		
O08	I believe that things will work out, no matter how difficult they seem.	O	O
O09	I have many good qualities.		
O10	I am able to do things just as well as others.		
O11	In uncertain times, I expect the best.		O
O12	I have a positive attitude about myself.		
Connectedness			
C01	I like to do things for others.		
C02	My friendships are rewarding.		
C03	When something good happens to me, I have people in my life that I like to share the good news with.	C	C
C04	I have friends that I really care about.	C	C
C05	I have a lot of friends.		
C06	There are people in my life who really care about me.	C	C
C07	I try to help other people whenever I can.		
C08	In my free time, I spend my time with friends.		
C09	When I have a problem, I have someone who will be there for me.	C	C
C10	I love my family members no matter what they do.		
C11	My family does fun things together.		
C12	I feel that I am loved.	C	
Happiness			
H01	I have a lot of fun.	H	H
H02	I feel happy.	H	H
H03	I love life.	H	H
H04	I laugh a lot.	H	
H05	I feel satisfied with how things are going.		
H06	I consider myself lucky to have the life that I have.		
H07	I am generally enthusiastic.		
H08	I feel positive and upbeat.		
H09	I enjoy life, getting the most out of everything.		
H10	I wake up and really look forward to my day.	O	
H11	I am in a good mood.		
H12	I am a cheerful person.	H	H

Note. 60 item = original set of 60 items; 25 item = item appears on the initial 25-item version; 20 item = item appears on the final 20-item version; E = engagement; P = perseverance; O = optimism; C = connectedness; H = happiness.

Table S2*Source Information for Scales and Measures Used in Studies*

Sample and measures	Source information
1) US Internet sample	
Age	Single item
Gender	Single item
Engagement	EPOCH 60-item bank
Perseverance	EPOCH 60-item bank
Optimism	EPOCH 60-item bank
Connectedness	EPOCH 60-item bank
Happiness	EPOCH 60-item bank
Life satisfaction	Healthy Pathways (Bevans et al., 2010)
Academic achievement	Healthy Pathways (Bevans et al., 2010)
School engagement	Healthy Pathways (Bevans et al., 2010)
Parent connectedness	Healthy Pathways (Bevans et al., 2010)
Teacher connectedness	Healthy Pathways (Bevans et al., 2010)
Peer relationships	Healthy Pathways (Bevans et al., 2010)
Anxiety	PROMIS pediatric short form (Varni et al., 2014)
Depression	PROMIS pediatric short form (Varni et al., 2014)
Aggression	PROMIS pediatric short form (Varni et al., 2014)
Physical vitality	Healthy Pathways (Bevans et al., 2010)
Somatic symptoms	Healthy Pathways (Bevans et al., 2010)
2) Australian boys school (2011 assessment)	
Grade	Single item
Engagement	EPOCH 60-item bank
Perseverance	EPOCH 60-item bank
Optimism	EPOCH 60-item bank
Connectedness	EPOCH 60-item bank
Happiness	EPOCH 60-item bank
Life satisfaction	Satisfaction with Life Scale (Diener et al., 1985)
School engagement	Healthy Pathways (Bevans et al., 2010)
Positive emotion	PANAS (Laurent et al., 1999)
Negative emotion	PANAS (Laurent et al., 1999)
Peer relations	3 items created by school
Growth mindset	Growth Mindset Scale (Dweck, 2006)
Gratitude	Gratitude Questionnaire (McCullough et al., 2002)
Hope scale	Children's Hope Scale (Snyder et al., 1997)
Grit perseverance	Grit scale (Duckworth et al., 2007)
Religiosity	8 Items created by school
Stressful life events	modified Life Events Checklist (Brand & Johnson, 1982)
Physical activity	Healthy Pathways (Bevans et al., 2010)
Physical vitality	Healthy Pathways (Bevans et al., 2010)
Somatic symptoms	Healthy Pathways (Bevans et al., 2010)
2) Australian boys school (2014 assessment)	
Grade	Single item

Engagement	EPOCH 20-item measure
Perseverance	EPOCH 20-item measure
Optimism	EPOCH 20-item measure
Connectedness	EPOCH 20-item measure
Happiness	EPOCH 20-item measure
Grit	Grit scale (Duckworth et al., 2007)
Growth mindset	Growth Mindset Scale (Dweck, 2006)
School engagement	Healthy Pathways (Bevans et al., 2010)
Meaning/ purpose	3 items based on Steger et al., 2006
Depression	PROMIS pediatric short form (Varni et al., 2014)
Anxiety	PROMIS pediatric short form (Varni et al., 2014)
Somatic symptoms	Healthy Pathways (Bevans et al., 2010)
Physical activity	Healthy Pathways (Bevans et al., 2010)
Physical vitality	Healthy Pathways (Bevans et al., 2010)
2014 term 1 GPA	School reported grade point average
Teacher-rated effort	Teacher reported classroom effort

3) Australian strengths based program

Age	Single item
Gender	Single item
Engagement	EPOCH 25-item measure
Perseverance	EPOCH 25-item measure
Optimism	EPOCH 25-item measure
Connectedness	EPOCH 25-item measure
Happiness	EPOCH 25-item measure
Life satisfaction	Satisfaction with Life Scale (Diener et al., 1985)
Optimism scale	BBSRI Your Thoughts Optimism Scale (Sawyer et al., 2010)
Help seeking	BBSRI Help Seeking Scale (Sawyer et al., 2010)
Resilience	Brief Resilience Scale (Smith et al., 2008)
Perceived Stress	Perceived Stress Scale (Cohen et al., 1983)

4) Australian grammar students

Age	Single item
Gender	Single item
Engagement	EPOCH 25-item measure
Perseverance	EPOCH 25-item measure
Optimism	EPOCH 25-item measure
Connectedness	EPOCH 25-item measure
Happiness	EPOCH 25-item measure
Life satisfaction	Healthy Pathways (Bevans et al., 2010)
Gratitude	Gratitude Questionnaire (McCullough et al., 2002)
Teacher relationship	Healthy Pathways (Bevans et al., 2010)
Strengths	Strengths & Difficulties Questionnaire (Goodman, 2007)
Difficulties	Strengths & Difficulties Questionnaire (Goodman, 2007)
Physical vitality	Healthy Pathways (Bevans et al., 2010)

5) US juvenile offenders

Age	Single item
Engagement	EPOCH 25-item measure

Perseverance	EPOCH 25-item measure
Optimism	EPOCH 25-item measure
Connectedness	EPOCH 25-item measure
Happiness	EPOCH 25-item measure
IQ	Single item
School performance	Unknown source
Self-esteem	Unknown source
Motivation to succeed	Unknown source
Future orientations	Unknown source
Psychosocial maturity	Unknown source
Teacher bonding	Unknown source
School misconduct	Unknown source
Exposure to violence	Unknown source
Anxiety	Unknown source
Depression	Unknown source
Aggression	Unknown source
Substance use	Unknown source
Health care visits	Unknown source
6) US strengths based program	
Age	Single item
Gender	Single item
Engagement	EPOCH 25-item measure
Perseverance	EPOCH 25-item measure
Optimism	EPOCH 25-item measure
Connectedness	EPOCH 25-item measure
Happiness	EPOCH 25-item measure
7) US inner city youth	
Age	Single item
Gender	Single item
Engagement	EPOCH 20-item measure
Perseverance	EPOCH 20-item measure
Optimism	EPOCH 20-item measure
Connectedness	EPOCH 20-item measure
Happiness	EPOCH 20-item measure
8) Australian girls school	
Age	Single item
Engagement	EPOCH 20-item measure
Perseverance	EPOCH 20-item measure
Optimism	EPOCH 20-item measure
Connectedness	EPOCH 20-item measure
Happiness	EPOCH 20-item measure
Life satisfaction	Satisfaction with life scale (Diener et al., 1985)
Self-acceptance	Psychological well-being scales (Ryff & Keyes, 1995)
Personal growth	Psychological well-being scales (Ryff & Keyes, 1995)
Purpose in life	Psychological well-being scales (Ryff & Keyes, 1995)
Environmental mastery	Psychological well-being scales (Ryff & Keyes, 1995)

Autonomy	Psychological well-being scales (Ryff & Keyes, 1995)
Positive relationships	Psychological well-being scales (Ryff & Keyes, 1995)
Social well-being	Psychological well-being scales (Ryff & Keyes, 1995)
Hope	Children's Hope Scale (Snyder et al., 1997)
Depression	Dass-21 (Lovibond & Lovibond, 1995)
Anxiety	Dass-21 (Lovibond & Lovibond, 1995)
Alcohol use	Single item
Illicit drug use	Single item
Perceived stress	Dass-21 (Lovibond & Lovibond, 1995)
Sleep	Single item
Exercise	Single item
9) US hospitalized youth	
Age	Single item
Gender	Single item
Engagement	EPOCH 20-item measure
Perseverance	EPOCH 20-item measure
Optimism	EPOCH 20-item measure
Connectedness	EPOCH 20-item measure
Happiness	EPOCH 20-item measure
Meaning	3 items based on Steger et al., 2006
Positive emotion	PANAS (Laurent et al., 1999)
Negative emotion	PANAS (Laurent et al., 1999)
10) US public school	
Age	Single item
Gender	Single item
Engagement	EPOCH 20-item measure
Perseverance	EPOCH 20-item measure
Optimism	EPOCH 20-item measure
Connectedness	EPOCH 20-item measure
Happiness	EPOCH 20-item measure
Academic performance	Healthy Pathways (Bevans et al., 2010)
Basic needs met	8 items derived from Denton (1990)
ASK language arts score	School reported test scores
ASK math score	School reported test scores

Table S3*Descriptive Information for the Final 20-Item Measure (Combined Across Sample 1, 2, and 7–10)*

	<i>N</i>	Mean	Median	<i>SD</i>	Skew	Kurtosis	Min	Max
Time 1								
Engagement	2,881	3.30	3.25	0.85	-0.07	-0.39	1.00	5.00
Perseverance	2,882	3.56	3.50	0.84	-0.37	-0.26	1.00	5.00
Optimism	2,882	3.52	3.50	0.90	-0.50	-0.16	1.00	5.00
Connectedness	2,882	4.01	4.25	0.90	-0.87	0.12	1.00	5.00
Happiness	2,882	3.70	3.75	0.97	-0.58	-0.41	1.00	5.00
Overall EPOCH	2,882	3.63	3.72	0.70	-0.59	0.22	1.00	5.00
Time 2								
Engagement	962	3.28	3.25	0.79	-0.20	-0.22	1.00	5.00
Perseverance	960	3.62	3.75	0.81	-0.42	-0.14	1.00	5.00
Optimism	960	3.55	3.50	0.79	-0.56	0.40	1.00	5.00
Connectedness	961	4.03	4.25	0.80	-0.88	0.47	1.00	5.00
Happiness	961	3.81	4.00	0.85	-0.78	0.22	1.00	5.00
Overall EPOCH	962	3.66	3.75	0.65	-0.67	0.78	1.00	5.00

Note. See Table S5 for descriptives for each sample.

Table S4*Cross-Time Correlations for the Final 20-Item EPOCH Measure*

Sample	E	P	O	C	H
2) Australian boys school (2.75 years, N = 118)					
Engagement	.26**	.24**	.02	.09	.07
Perseverance	.13	.25**	-.06	.08	.002
Optimism	.36**	.24*	.24*	.17	.24**
Connectedness	.26**	.20*	.16	.36**	.17
Happiness	.32**	.22*	.31**	.39**	.39**
7) US inner city youth (3 weeks, N = 82)					
Engagement	.63**	.45**	.33**	.29**	.36**
Perseverance	.39**	.69**	.51**	.47**	.39**
Optimism	.36**	.54**	.70**	.42**	.57**
Connectedness	.38**	.44**	.46**	.55**	.39**
Happiness	.33**	.51**	.59**	.41**	.71**
10) US public school (4 months, N = 62)					
Engagement	.23	.17	.12	.02	.08
Perseverance	.32*	.61**	.42**	.35**	.30*
Optimism	.32*	.46**	.51**	.30*	.37**
Connectedness	.17	.40**	.33**	.36**	.33**
Happiness	.30*	.33**	.40**	.23	.40**
Combined samples (N = 262)					
Engagement	.37**	.27**	.14*	.14*	.17**
Perseverance	.26**	.47**	.24**	.26**	.21**
Optimism	.34**	.39**	.46**	.29**	.39**
Connectedness	.26**	.31**	.29**	.42**	.30**
Happiness	.31**	.33**	.40**	.35**	.49**

Note. E = Time 2 Engagement; P = Time 2 Perseverance; C = Time 2 Connectedness; O = Time 2 Optimism; H = Time 2 Happiness.

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

Table S5

Descriptive Statistics for Additional Measures and Correlations With the EPOCH Factors for the Final 20-Item Measure

	N	Mean	SD	Min	Max	E	P	O	C	H
1) US Internet sample										
Age	1,511	15.50	1.26	12.00	18.00	.01	.01	.01	.02	-.04
Gender	1,505	0.47	0.50	0.00	1.00	-.03	-.004	-.06*	.08**	-.04
Engagement	1,515	3.33	0.87	1.00	5.00	1	.48**	.44**	.35**	.40**
Perseverance	1,515	3.56	0.85	1.00	5.00	.48**	1	.64**	.45**	.56**
Optimism	1,515	3.45	0.96	1.00	5.00	.44**	.64**	1	.56**	.72**
Connectedness	1,515	3.84	0.97	1.00	5.00	.35**	.50**	.56**	1	.62**
Happiness	1,515	3.63	0.96	1.00	5.00	.40**	.56**	.72**	.62**	1
Life satisfaction	1,515	3.56	0.92	1.00	5.00	.39**	.56**	.70**	.64**	.88**
Academic achievement	1,515	3.82	0.87	1.00	5.00	.29**	.53**	.40**	.32**	.36**
School engagement	1,515	3.20	0.87	1.00	5.00	.38**	.59**	.51**	.36**	.43**
Parent connectedness	1,515	2.82	0.91	1.00	5.00	.27**	.43**	.47**	.52**	.53**
Teacher connectedness	1,514	3.59	1.00	1.00	5.00	.26**	.41**	.41**	.42**	.39**
Peer connectedness	1,515	3.20	0.98	1.00	5.00	.36**	.48**	.53**	.66**	.63**
Anxiety	1,515	2.40	0.93	1.00	5.00	.01	-.22**	-.32**	-.22**	-.36**
Depression	1,515	2.20	0.99	1.00	5.00	-.12**	-.33**	-.46**	-.43**	-.58**
Aggression	1,515	2.26	0.93	1.00	5.00	-.04	-.22**	-.34**	-.32**	-.44**
Physical vitality	1,515	3.15	0.92	1.00	5.00	.36**	.55**	.56**	.42**	.63**
Somatic symptoms	1,515	2.17	0.72	1.00	5.00	-.002	-.20**	-.26**	-.23**	-.29**
2) Australian boys school										
Time 1										
Grade	515	2.44	1.14	1.00	7.00	.02	.07	-.08	-.10*	-.08
Engagement	516	3.43	0.71	1.00	5.00	1	.48**	.56**	.44**	.43**
Perseverance	516	3.52	0.81	1.00	5.00	.48**	1	.56**	.43**	.50**
Optimism	516	3.57	0.70	1.00	5.00	.56**	.56**	1	.53**	.63**
Connectedness	516	4.22	0.66	1.00	5.00	.44**	.43**	.53**	1	.66**
Happiness	516	3.96	0.78	1.00	5.00	.43**	.50**	.63**	.66**	1
Life satisfaction	516	3.58	0.81	1.00	5.00	.38**	.50**	.55**	.52**	.68**
School engagement	516	3.04	0.77	1.00	5.00	.49**	.50**	.43**	.35**	.39**
Positive emotion	516	3.62	0.63	1.00	5.00	.46**	.47**	.59**	.52**	.72**
Negative emotion	516	2.19	0.68	1.00	4.93	-.06	-.22**	-.27**	-.24**	-.39**
Peer relations	516	3.54	0.64	1.00	5.00	.23**	.33**	.37**	.39**	.53**
Growth mindset	516	2.94	0.61	1.00	4.00	.24**	.33**	.28**	.23**	.28**
Gratitude	516	4.04	0.77	1.00	5.00	.51**	.47**	.55**	.62**	.62**
Hope scale	516	3.79	0.71	1.00	5.00	.58**	.66**	.70**	.51**	.58**
Grit perseverance	516	3.62	0.69	1.00	5.00	.50**	.76**	.58**	.44**	.50**
Religiosity	516	2.59	1.06	1.00	5.00	.24**	.30**	.28**	.27**	.22**
Stressful life events	516	5.59	3.45	0.00	16.00	-.01	-.11**	-.17**	-.03	-.14**
Physical activity	516	3.56	0.87	1.00	5.00	.17**	.25**	.29**	.18**	.33**
Physical vitality	516	3.62	0.81	1.00	5.00	.24**	.36**	.44**	.30**	.52**
Somatic symptoms	516	2.09	0.81	1.00	5.00	-.07	-.12**	-.11*	-.16**	-.18**
Time 2										
Grade	709	8.67	2.13	5.00	12.00	.03	-.10**	-.02	-.12**	-.17**
Engagement	730	3.30	0.78	1.00	5.00	1	.45**	.49**	.44**	.50**
Perseverance	728	3.63	0.81	1.00	5.00	.45**	1	.53**	.45**	.46**

Optimism	728	3.51	0.79	1.00	5.00	.49**	.53**	1	.55**	.69**
Connectedness	729	4.06	0.78	1.00	5.00	.44**	.45**	.55**	1	.70**
Happiness	729	3.85	0.83	1.00	5.00	.50**	.46**	.69**	.70**	1
Grit	730	3.39	0.60	1.20	5.00	.21**	.78**	.30**	.30**	.28**
Growth mindset	716	2.90	0.62	1.00	4.00	.08*	.28**	.23**	.26**	.22**
School engagement	720	3.00	0.88	1.00	5.00	.44**	.57**	.48**	.39**	.47**
Sense of meaning	723	3.75	0.92	1.00	5.00	.49**	.57**	.70**	.62**	.72**
Depression	720	1.84	0.93	1.00	5.00	-.13**	-.27**	-.39**	-.44**	-.51**
Anxiety	716	2.08	0.94	1.00	5.00	-.07	-.23**	-.31**	-.32**	-.42**
Somatic symptoms	728	2.30	0.76	1.00	5.00	-.09*	-.23**	-.23**	-.26**	-.31**
Physical activity	720	3.67	0.98	1.00	5.00	.21**	.33**	.32**	.31**	.35**
Physical vitality	716	3.51	0.92	1.00	5.00	.30**	.35**	.42**	.37**	.46**
2014 term 1 GPA	679	10.76	1.65	5.00	14.88	.11**	.23**	.10*	.08*	-0.01
Teacher-rated effort	478	5.41	0.45	3.25	6.00	.09	.40**	.18**	.14**	.13**
7) US inner city youth										
Age	153	14.39	1.46	1.00	17.00	-.14	-.08	-.12	-.09	-.14
Gender	152	1.53	0.50	1.00	2.00	-.13	.03	.05	.23*	.11
Time 1										
Engagement	290	3.11	0.80	1.25	5.00	1	.31**	.35**	.36**	.37**
Perseverance	291	3.61	0.75	1.50	5.00	.31**	1	.59**	.45**	.45**
Optimism	291	3.69	0.86	1.00	5.00	.35**	.59**	1	.58**	.65**
Connectedness	291	4.09	0.82	1.33	5.00	.36**	.45**	.58**	1	.57**
Happiness	291	3.64	0.91	1.00	5.00	.37**	.45**	.65**	.57**	1
Time 2										
Engagement	164	3.17	0.81	1.50	5.00	1	.48**	.44**	.35**	.41**
Perseverance	164	3.57	0.79	1.50	5.00	.48**	1	.57**	.44**	.56**
Optimism	164	3.70	0.73	1.50	5.00	.44**	.57**	1	.50**	.65**
Connectedness	164	3.97	0.84	1.50	5.00	.35**	.44**	.50**	1	.59**
Happiness	164	3.75	0.87	1.50	5.00	.41**	.56**	.65**	.59**	1
8) Australian girls school										
Age	327	14.71	1.18	13.00	17.00	-.16**	-.11*	-.12*	-.06	-.15**
Engagement	327	3.18	0.89	1.00	5.00	1	.57**	.54**	.44**	.48**
Perseverance	327	3.50	0.91	1.00	5.00	.57**	1	.65**	.52**	.50**
Optimism	327	3.48	0.92	1.00	5.00	.54**	.65**	1	.60**	.74**
Connectedness	327	4.35	0.82	1.00	5.00	.44**	.52**	.60**	1	.71**
Happiness	327	3.96	1.01	1.00	5.00	.48**	.50**	.74**	.71**	1
Life satisfaction	327	22.70	7.49	5.00	35.00	-.10	-.03	-.06	-.12*	-.04
Psychological well-being	327	76.80	11.53	33	103	-.12	-.04	.01	-.07	-.02
Self-acceptance	327	12.56	3.36	3.00	18.00	-.06	-.04	-.07	-.04	-.05
Personal growth	327	14.20	2.35	3.00	18.00	-.02	-.08	-.05	-.04	.001
Purpose in life	327	13.10	2.61	6.00	18.00	.23**	.25**	.25**	.33**	.35**
Environmental mastery	327	11.97	2.78	3.00	18.00	.19**	.29**	.25**	.29**	.28**
Autonomy	327	11.79	2.68	3.00	18.00	.22**	.26**	.25**	.27**	.33**
Positive relationships	327	13.18	2.88	3.00	18.00	.18**	.24**	.25**	.29**	.25**
Social well-being	327	59.96	10.80	25.00	85.00	.09	.20**	.11	.11	.06
Hope	327	46.09	10.61	8.00	64.00	.18	.31**	.28**	.27**	.25**
Depression	327	10.09	10.46	0.00	42.00	.07	.09	.12*	.04	.08
Anxiety	327	9.80	8.73	0.00	42.00	.05	.07	.05	.20**	.15**
Alcohol use	327	1.27	0.62	1.00	5.00	.15**	.21**	.20**	.25**	.26**
Illicit drug use	327	0.02	0.15	0.00	1.00	-.16**	-.16**	-.19**	-.27**	-.29**

Perceived stress	327	13.65	9.23	0.00	42.00	-.06	-.10	-.11*	-.23**	-.17**
Sleep	327	3.35	0.71	1.00	5.00	-.07	-.08	-.01	-.16**	-.16**
Exercise	252	3.20	1.02	1.00	5.00	.32**	.32**	.31**	.28**	.30**
9) US hospitalized youth										
Age	146	13.73	2.52	10.00	18.00	.15	.12	.18*	.14	-.05
Gender	146	1.53	0.50	1.00	2.00	.01	.08	-.04	0.1	-.01
Engagement	146	3.32	0.89	1.25	5.00	1	.31**	.49**	.41**	.37**
Perseverance	146	3.71	0.80	1.25	5.00	.31**	1	.48**	.36**	.33**
Optimism	146	3.94	0.81	1.00	5.00	.49**	.48**	1	.56**	.58**
Connectedness	146	4.33	0.69	2.00	5.00	.41**	.36**	.56**	1	.53**
Happiness	146	3.98	0.76	1.25	5.00	.37**	.33**	.58**	.53**	1
Meaning	145	4.29	0.66	1.75	5.00	.37**	.56**	.64**	.52**	.41**
Positive emotion	146	3.70	0.83	1.15	5.00	.33**	.33**	.58**	.41**	.59**
Negative emotion	145	2.07	0.82	1.00	4.43	-.06	.03	-.26**	.03	-.31**
10) US public school										
Time 1										
Age	89	1.49	0.50	1.00	2.00	.10	.07	.13	-.02	.12
Gender	89	13.48	0.55	13.00	15.00	-.19	.02	-.019	.05	-.14
Engagement	89	3.10	0.86	1.25	5.00	1	.54**	.55**	.37**	.45**
Perseverance	89	3.65	0.90	1.25	5.00	.54**	1	.64**	.57**	.52**
Optimism	89	3.42	0.94	1.00	5.00	.55**	.64**	1	.62**	.70**
Connectedness	89	3.57	0.88	1.50	5.00	.37**	.57**	.62**	1	.66**
Happiness	89	3.39	1.05	1.00	5.00	.45**	.52**	.70**	.66**	1
Academic performance	89	3.40	0.90	1.17	4.83	.33**	.66**	.48**	.44**	.42**
Basic needs met	89	3.98	0.57	2.63	5.00	.12	.21	.09	.17	.10
ASK language arts score	81	196.41	28.73	136	271	-.08	.07	-.11	.14	-.12
ASK math score	83	208.59	45.86	130	300	.02	.22*	.09	.29**	.08
Time 2										
Age	68	1.54	0.50	1.00	2.00	-.06	-.21	-.12	-.13	-.21
Gender	68	13.79	0.59	13.00	15.00	-.22	-.001	-.19	.02	-.16
Engagement	68	3.31	0.91	1.25	5.00	1	.76**	.74**	.63**	.72**
Perseverance	68	3.60	0.94	1.25	5.00	.76**	1	.83**	.74**	.71**
Optimism	68	3.54	0.91	1.00	5.00	.74**	.83**	1	.73**	.78**
Connectedness	68	3.74	0.92	1.75	5.00	.63**	.74**	.73**	1	.85**
Happiness	68	3.61	1.03	1.25	5.00	.72**	.71**	.78**	.85**	1
Academic performance	68	3.58	0.99	1.00	5.00	.37**	.65**	.46**	.48**	.37**
Basic needs met	68	4.03	0.61	2.25	5.00	.13	.16	.14	.30*	.25*
ASK language arts score	67	211.55	21.13	162	255	.16	.23	.18	.35**	.23
ASK math score	67	223.12	43.96	142	300	.28*	.38**	.25*	.44**	.33**

Note. E = engagement; P = perseverance; C = connectedness; O = optimism; H = happiness. See Table S2 for measure source information.

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

Table S6

Structural Invariance Tests, Comparing Country (United States and Australia) and gender (males and females)

Model	χ^2 ($\Delta\chi^2$)	<i>df</i> (Δ Df)	<i>p</i> (Δ p)	CFI (Δ CFI)
Country				
M1 Configural invariance	1,049.79	320	<.001	.969
M2 Weak invariance (loadings)	(56.52)	(15)	(<.001)	(.002)
M3 (strong invariance (loadings, intercepts)	(385.10)	(15)	(<.001)	(.016)
M3b Partial strong invariance (except Engagement item 3)	(257.64)	(14)	(<.001)	(.010)
M3c Partial strong invariance (except Engagement items 3 and 4)	(226.41)	(13)	(<.001)	(.009)
M4 Partial strict (M3c plus residual variances)	(247.65)	(5)	(<.001)	(.010)
Gender				
M1 Configural invariance	958.46	320	<.001	.972
M2 Weak invariance (loadings)	(38.60)	(15)	(.001)	(.001)
M3 Strong invariance (loadings, intercepts)	(199.23)	(15)	(<.001)	(.008)
M4 Strict invariance	(66.50)	(5)	(<.001)	(.003)

Note. As χ^2 is affected by sample size, invariance decisions were made based on the comparative fit index (CFI), where Δ CFI < .01 implies invariance assumption holds (Cheung & Rensvold, 2002; Hirschfeld & von Brachel, 2014).

Table S7*Initial Evidence for Predictive Validity: Correlations and Partial Correlation Over Time*

	N	Correlations					Partial correlations				
		E	P	O	C	H	E	P	O	C	H
Sample 2 (Australian boys school)											
Grit	118	.19*	.28***	.18	.16	.15	.19*	.29***	.17	.16	.14
Growth mindset	118	-.02	.15	.02	.09	.10	-.15	.03	-.07	-.03	.01
Physical activity	118	-.10	-.12	-.10	.003	.16	-.10	-.15	-.14	.02	.11
Depression	118	.04	-.04	-.07	-.11	-.13	.04	-.02	-.05	-.10	-.11
Anxiety	118	.06	.02	-.08	.03	-.07	.07	.07	-.02	.07	-.01
Somatic symptoms	118	-.13	-.09	-.18	-.18*	-.11	-.13	-.09	-.17	-.18	-.11
Sense of meaning/purpose	118	.08	.06	.24***	.25***	.36***					
Physical vitality	118	-.09	-.11	.05	-.08	.15	-.18	-.25***	-.09	-.14	-.003
School engagement	118	.19*	.16	.33***	.22*	.35***	-.04	-.04	.15	-.01	.17
Grade point average	197	.10	.23***	.13	.19***	.15*	.05	.17*	.08	.14	.15*
Teacher rated cooperation	197	.22**	.22**	.18*	.18*	.13	.16*	.15*	.11	.11	.13
Teacher rated effort	197	.16*	.24***	.13	.15*	.10	.10	.16*	.05	.08	.09
Teacher rated organization	197	.16*	.25***	.16*	.17*	.11	.09	.15*	.09	.10	.13
Sample 10 (US public school)											
Self-rated academic performance	62	.21	.72***	.51***	.54***	.40***	-.11	.38**	.23	.29*	.21
Objective language arts score	57	-.08	.13	-.13	.28*	.05	.06	.11	.04	.25	.17
Objective math score	58	-.04	.20	.05	.28*	.13	-.03	-.07	.02	-.07	.004

Note. Partial correlations control for Time 1 scores on the same variable, except depression and anxiety, which control for Time 1 negative affect. Time 1 meaning/ purpose scores were not available.

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

Supplement S8*Psychometric information for initial 25-item version of the EPOCH measure*

- A) Latent factor loadings and fit indices in confirmatory factor analysis for the initial 25-item measure, by sample.
- B) Descriptive statistics for additional measures and correlations with the EPOCH factors for the initial 25-item measure.
- C) EPOCH correlations with other variables, based on the weighted (fixed effects) meta-analytic combination of effect sizes from each sample for the initial 25-item measure.

Table S8a*Latent Factor Loadings and Fit Indices in Confirmatory Factor Analysis for the Initial 25-Item Measure, by Sample*

Factor/question	3	4	5	6	Combo
Engagement					
I get completely absorbed in what I am doing.	.69	.71	.48	.58	.59
When I am learning something new, I lose track of how much time has passed.	.64	.63	.64	.74	.61
I feel passionate about the things that I enjoy doing.	.46	.55	.52	.42	.40
When I do an activity, I enjoy it so much that I lose track of time.	.45	.56	.39	.35	.45
In my classes, I concentrate so hard that time passes quickly.	.68	.71	.74	.82	.66
Perseverance					
I finish whatever I begin.	.70	.77	.64	.56	.70
I feel a sense of accomplishment from what I do.	.54	.68	.67	.79	.62
I keep at my schoolwork until I am done with it.	.64	.79	.65	.66	.69
Once I make a plan to get something done, I stick to it.	.58	.72	.61	.55	.66
I am a hard worker.	.70	.79	.68	.71	.72
Optimism					
I wake up and really look forward to my day.	.54	.68	.64	.50	.66
I believe that I will achieve my goals.	.70	.77	.73	.51	.75
I think that good things are going to happen to me.	.67	.78	.63	.71	.72
I believe that things will work out, no matter how difficult they seem.	.74	.72	.64	.57	.69
I believe that I can do just about anything I set my mind to.	.71	.72	.56	.50	.67
Connectedness					

When something good happens to me, I have people in my life that I like to share the good news with.	.68	.83	.66	.78	.74
I have friends that I really care about.	.57	.65	.60	.32	.56
There are people in my life who really care about me.	.73	.78	.68	.57	.73
When I have a problem, I have someone who will be there for me.	.77	.82	.72	.74	.75
I feel that I am loved.	.77	.84	.78	.67	.82
Happiness					
I have a lot of fun.	.77	.85	.62	.73	.76
I feel happy.	.88	.91	.69	.77	.82
I love life.	.66	.86	.69	.89	.78
I laugh a lot.	.65	.78	.59	.39	.68
I am a cheerful person.	.79	.86	.64	.59	.72
Latent factor correlations					
Engagement ~ Perseverance	.80	.72	.93	.75	.80
Engagement ~ Optimism	.70	.70	.88	.84	.78
Engagement ~ Connectedness	.52	.45	.75	.28	.52
Engagement ~ Happiness	.36	.50	.83	.53	.56
Perseverance ~ Optimism	.80	.65	.99	.89	.78
Perseverance ~ Connectedness	.51	.43	.71	.41	.52
Perseverance ~ Happiness	.40	.42	.77	.39	.51
Optimism ~ Connectedness	.65	.64	.79	.59	.67
Optimism ~ Happiness	.63	.72	.86	.66	.73
Connectedness ~ Happiness	.82	.76	.91	.72	.81
Model fit					
<i>N</i>	130	744	654	70	1,598
RMSEA	.079	.063	.076	.081	.062
RMSEA 90% confidence interval	.068, .090	.059, .067	.072, .080	.063, .098	.060, .065
SRMR	.088	.055	.054	.103	.049
χ^2 (<i>df</i> = 265)	481.6	1,056.1	1,274.9	387.6	1,914.2
CFI	0.849	0.930	0.848	0.703	0.907
TLI	0.829	0.920	0.828	0.664	0.895

Note. Confirmatory factor analysis estimated using the lavaan package (version 0.5.16) in R (version 3.0.3), using Time 1 measurement occasions. RMSEA = root mean square error of approximation, SRMR = standardized root mean residual, CFI = Comparative Fit Index, TLI = Tucker Lewis Index. For sample, 3 = Australian strengths study, 4 = Australian grammar school, 5 = US juvenile offenders, 6 = US strengths study, combo = combined across these four samples.

Table S8b

Descriptive Statistics for Additional Measures and Correlations With the EPOCH Factors for the Initial 25-Item Measure

	N	Mean	SD	Min	Max	E	P	O	C	H
1) US internet sample										
Age	1,511	15.50	1.26	12.00	18.00	.01	-.01	.02	.01	-.04
Gender	1,505	0.47	.50	.00	1.00	-.01	.01	-.07*	.06*	-.01
Engagement	1,515	3.45	.80	1.00	5.00	1	.60**	.60**	.45**	.48**
Perseverance	1,515	3.50	.85	1.00	5.00	.60**	1	.70**	.49**	.53**
Optimism	1,515	3.49	.93	1.00	5.00	.60**	.70**	1	.62**	.73**
Connectedness	1,515	3.79	.96	1.00	5.00	.45**	.49**	.62**	1	.68**
Happiness	1,515	3.63	.96	1.00	5.00	.48**	.53**	.73**	.68**	1
Life satisfaction	1,515	3.56	.92	1.00	5.00	.47**	.54**	.73**	.69**	.86**
Academic achievement	1,515	3.82	.87	1.00	5.00	.41**	.57**	.45**	.33**	.35**
School engagement	1,515	3.20	.87	1.00	5.00	.52**	.63**	.55**	.38**	.42**
Parent connectedness	1,515	2.82	.91	1.00	5.00	.35**	.45**	.51**	.57**	.52**
Teacher connectedness	1,514	3.59	1.00	1.00	5.00	.37**	.42**	.44**	.43**	.40**
Peer relationships	1,515	3.20	.98	1.00	5.00	.42**	.46**	.56**	.67**	.65**
Anxiety	1,515	2.40	.93	1.00	5.00	-.05	-.21**	-.34**	-.26**	-.33**
Depression	1,515	2.20	.99	1.00	5.00	-.19**	-.31**	-.49**	-.48**	-.60**
Aggression	1,515	2.26	.93	1.00	5.00	-.11**	-.23**	-.36**	-.36**	-.42**
Physical vitality	1,515	3.15	.92	1.00	5.00	.41**	.52**	.60**	.45**	.61**
Somatic symptoms	1,515	2.17	.72	1.00	5.00	-.09**	-.19**	-.31**	-.25**	-.27**
2) Australian boys school										
Grade	515	2.44	1.14	1.00	7.00	-.04	.07	-.01	-.09*	-.09*
Engagement	516	3.52	.66	1.00	5.00	1	.59**	.61**	.46**	.46**
Perseverance	516	3.48	.77	1.00	5.00	.59**	1	.70**	.47**	.52**
Optimism	515	3.51	.68	1.00	5.00	.61**	.70**	1	.55**	.63**
Connectedness	516	4.22	.66	1.00	5.00	.46**	.47**	.55**	1	.69**
Happiness	516	3.99	.74	1.00	5.00	.46**	.52**	.63**	.69**	1
Life satisfaction	516	3.58	.81	1.00	5.00	.41**	.54**	.58**	.56**	.67**
School engagement	516	3.04	.77	1.00	5.00	.56**	.54**	.53**	.36**	.38**
Positive emotion	516	3.62	.63	1.00	5.00	.50**	.52**	.65**	.54**	.71**
Negative emotion	516	2.19	.68	1.00	4.93	-.14**	-.23**	-.31**	-.28**	-.37**
Peer relations	516	3.54	.64	1.00	5.00	.24**	.34**	.39**	.41**	.51**
Growth mindset	516	2.94	.61	1.00	4.00	.29**	.35**	.33**	.23**	.28**
Gratitude	516	4.04	.77	1.00	5.00	.54**	.50**	.56**	.65**	.62**
Hope scale	516	3.79	.71	1.00	5.00	.63**	.69**	.75**	.52**	.57**
Grit perseverance	516	3.62	.69	1.00	5.00	.56**	.78**	.66**	.45**	.49**
Religiosity	516	2.59	1.06	1.00	5.00	.22**	.30**	.29**	.27**	.22**
Stressful life events	516	5.59	3.45	.00	16.00	-.003	-.13**	-.20**	-.06	-.12**
Physical activity	516	3.56	.87	1.00	5.00	.16**	.26**	.30**	.19**	.33**
Physical vitality	516	3.62	.81	1.00	5.00	.25**	.37**	.48**	.33**	.49**
Somatic symptoms	516	2.09	.81	1.00	5.00	-.12**	-.13**	-.12**	-.19**	-.18**
3) Australian strengths based program (intervention study)										
Age	129	13.03	.80	11.00	14.00	-.05	-.03	-.01	-.11	-.09
Gender	130	0.59	.49	1.00	2.00	.07	.04	-.07	.31**	.17
Time 1										
Engagement	130	3.24	.66	1.80	4.80	1	.62**	.58**	.41**	.29**

Perseverance	130	3.38	.69	1.60	4.80	.62**	1	.65**	.40**	.33**
Optimism	130	3.33	.75	1.40	5.00	.58**	.65**	1	.54**	.56**
Connectedness	130	4.30	.69	2.60	5.00	.41**	.40**	.54**	1	.70**
Happiness	130	4.21	.73	2.20	5.00	.29**	.33**	.56**	.70**	1
Life satisfaction	130	26.26	5.03	9.00	35.00	.44**	.44**	.59**	.57**	.62**
Optimism scale	130	23.66	6.75	7.00	36.00	.44**	.47**	.68**	.43**	.60**
Help seeking	130	21.76	3.69	1.00	28.00	.35**	.14	.28**	.48**	.36**
Resilience	130	3.24	.66	1.17	5.00	.20*	.23**	.37**	.12	.32**
Perceived stress	130	18.38	7.14	3.00	33.00	-.33**	-.37**	-.54**	-.31**	-.46**
Time 2							<i>(10 week cross-time, N = 130)</i>			
Engagement	130	3.31	.75	1.00	4.80	.25**	.23**	.17	.18*	.13
Perseverance	130	3.33	.83	1.00	4.80	.14	.27**	.17*	.14	.14
Optimism	130	3.31	.85	1.00	5.00	.08	.15	.21*	.07	.11
Connectedness	130	4.08	.87	1.00	5.00	.007	-.02	-.04	.24**	.18*
Happiness	130	4.04	.94	1.00	5.00	.04	-.02	.1	.19*	.22*
Life satisfaction	130	26.44	5.23	9.00	35.00	.12	.15	.14	.29**	.28**
Optimism scale	130	22.90	7.09	.00	36.00	.13	.16	.18*	.14	.20*
Help seeking	130	21.58	3.57	11.00	28.00	.08	.03	.08	.25**	.15
Resilience	130	3.21	.67	1.00	5.00	.07	.07	.21*	-.04	.11
Perceived stress	130	18.39	6.95	.00	36.00	-.09	-.17	-.25**	-.05	-.17
4) Australian grammar students										
Age	746	14.22	1.96	9.00	18.00	-.10**	-.04	-.003	-.12**	-.11**
Gender	746	0.53	.50	.00	1.00	.06	.08*	0	.17**	.07
Engagement	748	3.20	.73	1.00	5.00	1	.58**	.58**	.38**	.43**
Perseverance	747	3.40	.82	1.00	5.00	.58**	1	.58**	.39**	.39**
Optimism	747	3.26	.85	1.00	5.00	.58**	.58**	1	.56**	.65**
Connectedness	747	4.18	.84	1.00	5.00	.38**	.39**	.56**	1	.70**
Happiness	744	3.98	.94	1.00	5.00	.43**	.39**	.65**	.70**	1
Life satisfaction	744	3.93	.95	1.00	5.00	.40**	.36**	.59**	.69**	.81**
Gratitude	744	3.95	.66	1.33	5.00	.38**	.42**	.49**	.62**	.57**
Teacher relationship	744	3.62	.86	1.00	5.00	.45**	.40**	.40**	.47**	.46**
Strengths	744	3.78	.64	1.00	5.00	.52**	.57**	.53**	.62**	.58**
Difficulties	744	2.04	.67	1.00	5.00	-.06	-.16**	-.21**	-.35**	-.31**
Physical vitality	744	3.51	.88	1.00	5.00	.38**	.41**	.56**	.44**	.60**
5) US juvenile offenders										
Age	654	15.30	1.27	13.00	17.00	.06	.03	.02	-.02	-.02
Time 1										
Engagement	654	3.55	.70	1.00	5.00	1	.57**	.55**	.47**	.51**
Perseverance	654	3.67	.77	1.00	5.00	.57**	1	.73**	.50**	.54**
Optimism	654	3.87	.74	1.00	5.00	.55**	.73**	1	.58**	.62**
Connectedness	654	4.27	.68	1.00	5.00	.47**	.50**	.58**	1	.69**
Happiness	654	4.18	.67	1.00	5.00	.51**	.54**	.62**	.69**	1
IQ	653	88.03	11.35	55.00	122.00	.02	-.07	-.03	-.01	-.02
School performance	637	4.56	1.69	1.00	8.00	-.21**	-.27**	-.16**	-.13**	-.14**
Self-esteem	654	21.31	4.28	11.00	30.00	.27**	.36**	.47**	.38**	.44**
Motivation to succeed	653	3.44	.60	1.50	5.00	.07	.12**	.22**	.18**	.15**
Future orientations	654	2.39	.34	1.40	3.80	.17**	.37**	.33**	.16**	.14**
Psychosocial maturity	654	1.99	.43	1.03	3.30	-.21**	-.35**	-.40**	-.35**	-.31**
Teacher bonding	453	3.62	.79	1.00	5.00	.23**	.19**	.20**	.17**	.16**
School misconduct	481	1.62	.46	1.00	3.33	-.12**	-.25**	-.19**	-.06	-.08
Exposure to violence	654	1.22	1.25	.00	5.00	-.02	-.01	-.03	-.02	-.06

Anxiety	654	5.62	4.13	.00	21.00	.06	-.05	-.07	-.09*	-.12**
Depression	654	5.90	4.69	.00	3.00	-.13**	-.23**	-.29**	-.25**	-.32**
Aggression	654	2.10	1.64	.00	7.00	-.06	-.15**	-.13**	-.10*	-.09*
Substance use	654	11.30	1.96	1.00	13.00	.08	.18**	.15**	.12**	.15**
Health care visits	654	1.93	1.58	.00	8.00	.04	-.02	-.004	.06	.01
Time 2										
<i>(6 month cross time, N = 494)</i>										
Engagement	494	3.63	.74	1.00	5.00	.47**	.39**	.37**	.30**	.32**
Perseverance	494	3.81	.77	1.00	5.00	.40**	.56**	.48**	.37**	.37**
Optimism	494	3.99	.72	1.60	5.00	.37**	.50**	.56**	.45**	.45**
Connectedness	494	4.29	.68	2.00	5.00	.32**	.38**	.40**	.53**	.44**
Happiness	494	4.22	.69	1.60	5.00	.32**	.38**	.38**	.44**	.56**
School performance	483	4.07	1.72	1.00	8.00	-.22**	-.26**	-.26**	-.22**	-.22**
Self-esteem	496	21.88	4.50	9.00	30.00	.22**	.30**	.36**	.32**	.38**
Motivation to succeed	496	3.51	.62	1.00	5.00	.17**	.18**	.21**	.23**	.22**
Future orientations	497	2.46	.34	1.33	3.60	.15**	.34**	.31**	.20**	.16**
Psychosocial maturity	496	1.89	.45	1.00	3.33	-.16**	-.27**	-.26**	-.30**	-.29**
Teacher bonding	453	3.62	.79	1.00	5.00	.23**	.19**	.20**	.17**	.16**
School misconduct	481	1.62	.46	1.00	3.33	-.12**	-.25**	-.19**	-.06	-.08
Exposure to violence	497	0.58	.91	.00	5.00	-.09*	-.11*	-.11*	-.12**	-.11*
Anxiety	497	4.92	4.08	.00	21.00	-.03	-.13**	-.11*	-.13**	-.14**
Depression	497	5.09	4.37	.00	25.00	-.18**	-.25**	-.29**	-.30**	-.34**
Aggression	497	1.82	1.62	.00	7.00	-.02	-.09*	-.05	-.08	-.09*
Substance use	497	11.80	1.76	3.00	13.00	.05	.22**	.19**	.17**	.10*
Arrests past 6 months	497	0.26	.65	.00	5.00	-.05	-.12**	-.11*	-.12**	-.09*
Health care visits	497	1.86	1.67	.00	9.00	.07	-.06	-.03	.07	.03
6) US strengths based program (intervention study)										
Age	70	13.07	.35	12.00	14.00	.07	.01	.13	.09	.05
Gender	70	1.54	.50	1.00	2.00	.08	-.05	-.01	.14	.16
Time 1										
Engagement	70	3.86	.57	2.60	5.00	1	.62**	.58**	.30*	.37**
Perseverance	70	3.69	.63	2.00	5.00	.62**	1	.54**	.26*	.37**
Optimism	70	3.99	.59	2.20	5.00	.58**	.54**	1	.32**	.44**
Connectedness	70	4.63	.40	3.20	5.00	.30*	.26*	.32**	1	.51**
Happiness	70	4.29	.61	2.60	5.00	.37**	.37**	.44**	.51**	1
Time 2										
<i>(5 day cross time, N = 70)</i>										
Engagement	70	4.01	.64	2.00	5.00	.66**	.44**	.46**	.17	.33**
Perseverance	70	3.98	.63	2.40	5.00	.45**	.74**	.52**	.21	.34**
Optimism	70	4.36	.50	2.80	5.00	.41**	.45**	.58**	.2	.44**
Connectedness	70	4.67	.46	2.80	5.00	.13	.14	.21	.57**	.49**
Happiness	70	4.39	.67	2.00	5.00	.24*	.2	.33**	.45**	.71**
Time 3										
<i>(3 week, N = 70)</i>										
Engagement	70	3.91	.56	2.60	4.80	.40**	.39**	.18	.21	.22
Perseverance	70	3.86	.59	2.20	4.80	.32**	.60**	.32**	.17	.26*
Optimism	70	4.16	.56	2.60	5.00	.35**	.46**	.41**	.23	.31**
Connectedness	70	4.61	.50	2.20	5.00	.22	.22	.27*	.63**	.56**
Happiness	70	4.46	.58	2.00	5.00	.17	.13	.27*	.49**	.63**

Note. Correlations are with Time 1 EPOCH scores. E = engagement; P = perseverance; C = connectedness; O = optimism; H = happiness. See Table S2 for measure source information.

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

Table S8c

EPOCH Correlations With Other Variables for the Initial 25-Item Measure, Based on the Weighted (Fixed Effects) Meta-Analytic Combination of Effect Sizes From Each Sample

	N	K	E	P	O	C	H
Engagement	3,633	6	1.00	.59**	.59**	.44**	.46**
Perseverance	3,632	6	.59**	1.00	.68**	.46**	.49**
Optimism	3,631	6	.59**	.68**	1.00	.58**	.67**
Connectedness	3,632	6	.44**	.46**	.58**	1.00	.68**
Happiness	3,629	6	.46**	.49**	.67**	.68**	1.00
Age	3,108	5	-.01	-.01	.02	-.03	-.05**
Gender	2,449	4	.02	.03	-.05*	.11**	.03
Grade	2,871	4	-.03*	.00	.01	-.04*	-.07**
IQ	653	1	.02	-.07	-.03	-.01	-.02
Life satisfaction	2,905	4	.44**	.49**	.67**	.67**	.82**
Academic performance	2,152	2	.36**	.49**	.37**	.27**	.29**
Gratitude	1,260	2	.45**	.46**	.52**	.63**	.59**
Grit	516	1	.56**	.78**	.66**	.45**	.49**
Growth mindset	516	1	.29**	.35**	.33**	.23**	.28**
Help-seeking behavior	130	1	.35**	.14	.28**	.48**	.36**
Hope scale	516	1	.63**	.69**	.75**	.52**	.57**
Motivation to succeed	653	1	.07	.12**	.22**	.18**	.15**
Parental connectedness	1,515	1	.35**	.45**	.51**	.57**	.52**
Teacher connectedness	2,711	3	.37**	.38**	.39**	.40**	.38**
Peer connectedness	2,031	2	.38**	.43**	.52**	.61**	.62**
Positive affect	516	1	.50**	.52**	.65**	.54**	.71**
Religiosity	516	1	.22**	.30**	.29**	.27**	.22**
Resilience	130	1	.20*	.23**	.37**	.12	.32**
School engagement	2,031	2	.54**	.61**	.55**	.38**	.41**
School misconduct	481	1	-.12**	-.25**	-.19**	-.06	-.08
Self esteem	654	1	.27**	.36**	.47**	.38**	.44**
Negative affect	516	1	-.14**	-.23**	-.31**	-.28**	-.37**
Depression	2,169	2	-.17**	-.29**	-.43**	-.41**	-.49**
Anxiety	2,169	2	-.01	-.16**	-.26**	-.21**	-.27**
Aggression	2,169	2	-.09**	-.20**	-.30**	-.28**	-.33**
Difficulties	744	1	-.06	-.16**	-.21**	-.35**	-.31**
Exposure to violence	654	1	-.02	-.01	-.03	-.02	-.06
Stress	646	2	-.07	-.18**	-.27**	-.11**	-.20**
Substance use social problems	654	1	-.05	-.15**	-.13**	-.07	-.10*
Physical vitality	2,775	1	.37**	.47**	.57**	.43**	.59**
Somatic symptoms	2,031	2	-.09**	-.18**	-.26**	-.23**	-.25**
Health care visits	654	1	.04	-.02	.00	.06	.01
Physical activity	516	1	.16**	.26**	.30**	.19**	.33**

Note. Fixed effects meta-analysis, weighted by sample size, using Time 1 correlations. N = number of participants included in effect size; K = number of samples; E = engagement, P = perseverance, O = optimism, C = connectedness, H = happiness. See Table S2 for scales used, and Table S8b for descriptives and correlations in each sample.

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

Supplement References

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