

Test-Retest Analyses of ACT Engage® Assessments for Grades 6–9, Grades 10–12, and College

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For each ACT Engage assessment, test-retest data were examined to assess instrument reliability, determine if consistency in scores depends on the time between assessments, and assess longitudinal mean score trends.

Results Summary for ACT Engage Grades 6–9

- Test-retest reliabilities (0–2 month interval) range from $r = .71$ to $.85$ across scales (median = $.80$). The success indices are near the top of this range ($.85$ for Academic Success and $.83$ for Graduation).
- Test-retest correlations decrease as the time interval increases, suggesting that psychosocial factors are changing between grades 6 and 9.
- Mean difference scores tend to become more negative as the time interval increases (with the noted exception of Orderly Conduct). This could be due to grade-level effects; for example, scores on some scales tend to be lower for students in grade 9 relative to students in grades 6 or 7. For most scales, the mean differences are small ($< |1|$) in comparison with the standard deviations.

Results Summary for ACT Engage Grades 10–12

- Test-retest reliabilities (0–2 month interval) range from $r = .70$ to $.84$ across scales (median = $.76$). The success indices are at the top of this range ($.81$ for Academic Success and $.84$ for Retention). The test-retest reliabilities for ACT Engage Grades 10–12 are lower than those for ACT Engage Grades 6–9, but are based on smaller sample sizes (as small as $n = 609$).

- Test-retest correlations decrease as the time interval increases, suggesting that psychosocial factors are changing between grades 10 and 12.
- Mean difference scores tend to be small ($< |1|$), even for the longest time interval of 16–32 months, with the exceptions of Commitment to College (difference of -1.5) and Study Skills (difference of 1.7). These small mean differences, combined with the large standard deviations, indicate that scores are not changing substantially between administrations.

Results Summary for ACT Engage College

- Test-retest reliabilities (0–2 month interval) range from $r = .70$ to $.92$ across scales (median = $.78$). The Retention Index is at the top of this range, while the Academic Success Index is at $.78$. The test-retest reliabilities for ACT Engage College are lower than those for ACT Engage Grades 6–9 and lower in most cases than those for ACT Engage Grades 10–12, but are based on smaller sample sizes than both assessments (as small as $n = 461$).
- Test-retest correlations decrease as the time interval increases, suggesting that psychosocial factors are changing during the first two years of college.
- Mean difference scores tend to become increasingly negative as the time interval lengthens. This suggests that students rate their behavior lower with more exposure to college, which could be due to them developing a higher standard of comparison.

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Table 1. Test-Retest Statistics for ACT Engage Grades 6–9

Scale/Index	Time Interval (Months)	N	r	Test 1		Test 2		Difference	
				Mean	SD	Mean	SD	Mean	SD
Academic Discipline	0–2	1,189	0.82	47.5	8.8	47.4	8.9	-0.1	5.3
	3–8	939	0.69	46.4	8.4	46.4	9.1	0.0	6.9
	9–15	12,824	0.67	47.9	8.6	47.3	8.5	-0.5	7.0
	16–32	8,167	0.59	48.2	8.7	47.2	8.3	-1.0	7.8
Commitment	0–2	1,187	0.73	55.5	6.6	55.1	7.0	-0.4	5.0
	3–8	939	0.58	55.4	6.0	55.2	6.4	-0.1	5.7
	9–15	12,803	0.55	56.2	5.4	55.9	5.6	-0.2	5.3
	16–32	8,166	0.44	56.4	5.3	55.9	5.5	-0.5	5.7
Family Attitude	0–2	1,185	0.71	54.7	6.4	54.2	6.7	-0.5	5.0
	3–8	938	0.56	54.7	5.9	54.5	6.1	-0.1	5.6
	9–15	12,780	0.56	55.6	5.4	55.2	5.5	-0.4	5.1
	16–32	8,165	0.48	55.9	5.2	55.1	5.5	-0.8	5.4
Family Involvement	0–2	1,189	0.77	46.5	9.4	46.7	9.5	0.1	6.4
	3–8	939	0.68	45.2	9.4	45.8	9.5	0.6	7.5
	9–15	12,813	0.65	47.5	8.7	47.1	8.9	-0.5	7.4
	16–32	8,168	0.56	48.1	8.6	47.0	8.9	-1.1	8.2
Managing Feelings	0–2	1,185	0.83	42.1	10.5	41.8	10.7	-0.3	6.1
	3–8	938	0.73	40.1	10.1	41.1	10.2	1.0	7.5
	9–15	12,778	0.69	42.6	10.5	42.4	10.3	-0.2	8.2
	16–32	8,165	0.58	43.3	10.5	43.0	9.8	-0.3	9.3
Optimism	0–2	1,189	0.79	48.8	8.3	48.4	8.7	-0.3	5.6
	3–8	939	0.67	47.1	9.0	47.9	9.1	0.8	7.3
	9–15	12,808	0.6	49.2	7.9	48.9	8.1	-0.3	7.1
	16–32	8,166	0.5	49.7	7.6	48.7	8.1	-1.0	7.9
Orderly Conduct	0–2	1,182	0.81	45.4	14.2	45.5	14.5	0.1	8.9
	3–8	937	0.69	42.9	14.5	44.4	14.9	1.5	11.5
	9–15	12,742	0.67	45.5	14.0	46.4	14.0	0.8	11.3
	16–32	8,160	0.55	45.6	13.8	48.1	13.3	2.4	12.8

Table 1. (continued)

Scale/Index	Time Interval (Months)	N	r	Test 1		Test 2		Difference	
				Mean	SD	Mean	SD	Mean	SD
Relationships with School Personnel	0–2	1,188	0.78	39.8	9.8	39.5	10.2	-0.3	6.7
	3–8	939	0.64	38.8	9.7	39.3	9.7	0.5	8.3
	9–15	12,807	0.6	40.8	9.3	39.9	9.6	-0.8	8.4
	16–32	8,166	0.49	41.5	9.2	39.7	9.4	-1.9	9.4
School Safety Climate	0–2	1,189	0.75	42.2	9.0	41.8	9.4	-0.4	6.5
	3–8	939	0.69	41.3	9.6	41.4	9.8	0.2	7.6
	9–15	12,827	0.63	42.1	8.8	41.1	9.0	-1.1	7.6
	16–32	8,168	0.48	42.8	8.5	40.5	8.6	-2.3	8.7
Thinking Before Acting	0–2	1,189	0.8	40.8	8.4	40.9	8.6	0.2	5.4
	3–8	939	0.67	39.0	7.9	39.9	8.5	0.8	6.7
	9–15	12,813	0.65	41.1	8.0	41.3	8.2	0.3	6.8
	16–32	8,167	0.54	41.2	8.0	41.6	8.1	0.4	7.7
Academic Success Index	0–2	1,182	0.85	72.2	19.5	72.3	19.6	0.1	10.8
	3–8	937	0.75	69.5	20.0	69.5	21.1	-0.1	14.5
	9–15	12,738	0.72	73.7	18.4	73.0	18.7	-0.6	13.9
	16–32	8,159	0.64	74.6	17.9	73.7	18.0	-0.8	15.2
Graduation Index	0–2	1,182	0.83	83.3	18.9	83.0	19.1	-0.3	10.9
	3–8	937	0.71	82.7	17.4	81.6	19.5	-1.1	14.3
	9–15	12,728	0.69	85.5	16.0	84.9	16.7	-0.6	13.0
	16–32	8,160	0.61	86.6	15.0	85.9	16.0	-0.8	13.7

Table 2. Test-Retest Statistics for ACT Engage Grades 10–12

Scale/Index	Time Interval (Months)	N	r	Test 1		Test 2		Difference	
				Mean	SD	Mean	SD	Mean	SD
Academic Discipline	0–2	609	0.77	47.9	9.9	48.1	9.6	0.2	6.6
	3–8	4,291	0.76	46.6	9.1	46.1	9.4	-0.5	6.4
	9–15	3,529	0.7	47.4	8.1	47.7	8.3	0.3	6.3
	16–32	640	0.67	47.9	8.8	48.0	8.8	0.2	7.2
Academic Self-Confidence	0–2	609	0.78	45.2	9.1	45.5	9.3	0.3	6.1
	3–8	4,290	0.78	43.0	8.6	43.5	8.7	0.4	5.7
	9–15	3,529	0.74	42.6	8.0	43.1	8.1	0.4	5.8
	16–32	639	0.71	43.7	8.5	43.7	8.7	0.0	6.6
Commitment to College	0–2	610	0.73	51.9	8.9	51.5	9.2	-0.4	6.7
	3–8	4,291	0.74	50.7	8.8	49.9	9.2	-0.8	6.5
	9–15	3,529	0.67	52.6	7.6	52.1	8.2	-0.6	6.4
	16–32	640	0.59	52.2	8.0	50.7	9.0	-1.5	7.7
Communication Skills	0–2	609	0.76	49.1	7.6	48.9	8.2	-0.3	5.5
	3–8	4,291	0.66	48.4	7.1	48.3	7.4	-0.1	6.0
	9–15	3,528	0.64	48.2	7.0	48.8	7.0	0.6	5.9
	16–32	639	0.61	49.3	7.1	49.9	7.1	0.6	6.2
General Determination	0–2	609	0.76	51.5	7.2	51.6	7.4	0.1	5.1
	3–8	4,290	0.68	51.0	6.4	50.9	6.8	-0.1	5.3
	9–15	3,529	0.68	51.0	6.3	51.7	6.3	0.6	5.1
	16–32	640	0.62	51.2	6.6	52.0	6.4	0.9	5.7
Goal Striving	0–2	609	0.7	49.9	7.8	50.1	8.4	0.1	6.3
	3–8	4,289	0.72	49.0	7.5	48.9	7.8	-0.1	5.8
	9–15	3,528	0.69	49.8	7.2	50.2	7.2	0.4	5.6
	16–32	639	0.64	49.3	7.7	49.9	7.3	0.7	6.4
Social Activity	0–2	609	0.75	39.7	10.0	40.1	10.1	0.4	7.2
	3–8	4,290	0.77	40.5	9.6	40.6	9.6	0.1	6.5
	9–15	3,529	0.72	39.4	8.9	39.7	9.2	0.3	6.7
	16–32	640	0.68	41.5	9.8	41.5	10.0	0.0	7.9

Table 2. (continued)

Scale/Index	Time Interval (Months)	N	r	Test 1		Test 2		Difference	
				Mean	SD	Mean	SD	Mean	SD
Social Connection	0–2	609	0.77	43.8	9.3	43.9	9.6	0.2	6.3
	3–8	4,291	0.73	43.9	8.5	43.9	8.8	-0.1	6.4
	9–15	3,529	0.69	44.0	7.9	44.0	8.3	0.0	6.3
	16–32	640	0.67	46.0	8.8	45.6	9.2	-0.5	7.2
Steadiness	0–2	609	0.73	42.0	9.9	42.4	9.9	0.4	7.2
	3–8	4,291	0.73	40.8	9.1	41.1	9.3	0.3	6.8
	9–15	3,529	0.71	41.5	9.4	42.4	9.4	1.0	7.2
	16–32	640	0.64	41.8	9.2	42.4	9.1	0.6	7.7
Study Skills	0–2	609	0.75	44.7	8.9	44.9	9.5	0.1	6.6
	3–8	4,289	0.68	41.9	8.7	42.5	8.8	0.6	7.0
	9–15	3,528	0.67	43.9	8.3	44.8	8.3	1.0	6.7
	16–32	639	0.58	42.8	8.3	44.5	8.2	1.7	7.6
Academic Success Index	0–2	609	0.81	77.8	20.1	77.4	19.8	-0.3	12.4
	3–8	4,290	0.77	76.1	18.9	75.7	19.1	-0.4	12.8
	9–15	3,529	0.71	78.0	15.8	78.2	15.9	0.2	12.1
	16–32	640	0.62	78.1	18.3	78.4	17.7	0.2	15.6
Retention Index	0–2	609	0.84	70.3	14.9	69.9	15.3	-0.4	8.5
	3–8	4,290	0.81	68.7	13.7	68.2	14.2	-0.5	8.6
	9–15	3,529	0.75	70.2	11.6	70.0	12.0	-0.1	8.3
	16–32	640	0.7	70.9	13.2	70.7	14.1	-0.2	10.6

Table 3. Test-Retest Statistics for ACT Engage College

Scale/Index	Time Interval (Months)	N	r	Test 1		Test 2		Difference	
				Mean	SD	Mean	SD	Mean	SD
Academic Discipline	0–2	3,580	0.77	49.9	7.4	49.8	7.9	-0.1	5.3
	3–8	2,910	0.63	49.4	7.7	47.2	8.6	-2.2	7.1
	9–15	914	0.65	48.5	7.9	47.3	8.3	-1.2	6.8
	16–32	463	0.61	50.1	7.8	47.6	8.5	-2.5	7.2
Academic Self-Confidence	0–2	3,558	0.8	53.6	9.2	53.9	9.3	0.3	5.9
	3–8	2,905	0.69	52.5	9.0	52.2	9.3	-0.3	7.2
	9–15	912	0.68	53.0	9.2	53.0	9.8	-0.1	7.6
	16–32	462	0.63	55.0	9.2	54.4	9.7	-0.6	8.1
Commitment to College	0–2	3,582	0.7	55.5	6.0	55.1	6.5	-0.4	4.8
	3–8	2,910	0.55	55.4	5.9	53.1	7.6	-2.3	6.6
	9–15	914	0.49	55.4	5.2	53.5	7.0	-1.9	6.4
	16–32	465	0.46	56.0	5.1	53.5	7.8	-2.5	7.1
Communication Skills	0–2	3,572	0.73	51.2	6.3	51.2	6.5	0.0	4.7
	3–8	2,910	0.63	50.9	6.2	50.3	6.6	-0.6	5.5
	9–15	914	0.6	51.2	5.8	50.7	6.3	-0.5	5.4
	16–32	463	0.51	51.4	5.8	50.6	6.4	-0.7	6.0
General Determination	0–2	3,574	0.72	59.6	6.0	59.6	6.3	-0.1	4.6
	3–8	2,910	0.61	59.4	5.8	58.4	6.6	-1.0	5.5
	9–15	914	0.59	59.2	5.6	58.7	6.2	-0.5	5.3
	16–32	463	0.56	59.4	5.8	58.5	6.5	-0.9	5.8
Goal Striving	0–2	3,561	0.75	52.8	6.3	52.7	6.6	-0.1	4.5
	3–8	2,905	0.67	52.3	6.4	51.6	6.9	-0.8	5.4
	9–15	912	0.61	52.2	5.9	51.7	6.4	-0.5	5.4
	16–32	462	0.57	52.4	5.8	51.7	6.7	-0.7	5.9
Social Activity	0–2	3,577	0.83	41.5	9.7	41.6	9.7	0.1	5.6
	3–8	2,910	0.75	41.9	9.8	41.0	9.7	-0.9	7.0
	9–15	914	0.72	41.9	9.3	41.6	9.5	-0.3	7.0
	16–32	465	0.66	41.1	10.6	41.1	9.7	-0.1	8.4

Table 3. (continued)

Scale/Index	Time Interval (Months)	N	r	Test 1		Test 2		Difference	
				Mean	SD	Mean	SD	Mean	SD
Social Connection	0–2	3,573	0.78	49.9	8.5	50.1	8.8	0.2	5.7
	3–8	2,910	0.65	49.9	8.2	48.9	9.1	-1.0	7.2
	9–15	914	0.62	50.2	8.0	49.8	8.4	-0.4	7.1
	16–32	464	0.57	49.3	8.5	48.0	8.6	-1.2	7.9
Steadiness	0–2	3,578	0.8	54.0	10.7	54.2	10.8	0.2	6.9
	3–8	2,909	0.7	52.9	10.5	51.3	10.8	-1.6	8.2
	9–15	914	0.64	53.1	10.0	52.4	10.6	-0.7	8.8
	16–32	464	0.56	53.3	10.1	52.5	10.8	-0.9	9.8
Study Skills	0–2	3,567	0.76	57.2	9.2	57.7	9.4	0.5	6.5
	3–8	2,906	0.64	56.3	9.3	55.9	9.7	-0.4	8.1
	9–15	912	0.62	55.8	8.7	56.5	9.0	0.7	7.7
	16–32	461	0.5	56.4	8.8	56.3	8.8	0.0	8.8
Academic Success Index	0–2	3,577	0.78	80.6	12.5	80.6	12.5	0.0	8.3
	3–8	2,910	0.62	79.1	12.4	77.8	13.7	-1.2	11.5
	9–15	914	0.63	79.9	13.9	79.7	13.5	-0.3	11.8
	16–32	463	0.53	83.1	12.1	82.1	13.3	-1.0	12.4
Retention Index	0–2	3,573	0.92	63.5	13.5	63.2	13.6	-0.3	5.6
	3–8	2,910	0.78	68.4	11.7	66.9	12.5	-1.4	8.0
	9–15	914	0.76	71.5	11.2	70.3	11.9	-1.1	8.0
	16–32	463	0.68	72.4	11.2	70.8	12.9	-1.7	9.7

Methodological Notes

Test-retest data were examined for four time intervals:

- 0–2 months (the short interval that is typical for assessing instrument reliability)
- 3–8 months (interval corresponding to tests given the same school year)
- 9–15 months (tests given approximately one year apart)
- 16–32 months (tests given approximately two years apart)

For each interval and each ACT Engage scale, the following statistics are reported:

- N (sample size)
- r (the test-retest correlation)
- Test 1 mean and standard deviation (Test 1 is the earlier assessment.)
- Test 2 mean and standard deviation (Test 2 is the later assessment.)

- Difference score mean (Test 1 mean minus Test 2 mean) and standard deviation

Records with response flags for inconsistent or non-varied responding were removed from the analysis.

The results are presented in Table 1 for ACT Engage Grades 6–9, Table 2 for ACT Engage Grades 10–12, and Table 3 for ACT Engage College. ■