

Appendix N—DETAILED ALPHA COEFFICIENT RESULTS

Table N-1. 2008–09 NECAP: Subgroup Reliability by Grade and Content

<i>Grade</i>	<i>Content</i>	<i>Subgroup</i>	<i>N</i>	<i>(α)</i>
3	Mathematics	White	25823	0.92
		Native Hawaiian or Pacific Islander	11	0.75
		Hispanic or Latino	2339	0.93
		Black or African American	1239	0.93
		Asian	776	0.93
		American Indian or Alaskan Native	123	0.94
		LEP	1408	0.94
		IEP	4171	0.94
	Low SES	9163	0.93	
	Reading	White	25820	0.89
		Native Hawaiian or Pacific Islander	11	0.64
		Hispanic or Latino	2271	0.89
		Black or African American	1221	0.89
		Asian	766	0.88
		American Indian or Alaskan Native	122	0.89
		LEP	1301	0.90
IEP		4170	0.90	
Low SES	9113	0.90		
4	Mathematics	White	26940	0.92
		Native Hawaiian or Pacific Islander	10	0.95
		Hispanic or Latino	2787	0.92
		Black or African American	1401	0.93
		Asian	782	0.94
		American Indian or Alaskan Native	230	0.93
		LEP	1524	0.93
		IEP	4724	0.93
	Low SES	10004	0.93	
	Reading	White	26935	0.86
		Native Hawaiian or Pacific Islander	10	0.83
		Hispanic or Latino	2717	0.88
		Black or African American	1389	0.88
		Asian	762	0.85
		American Indian or Alaskan Native	231	0.88
		LEP	1408	0.88
IEP		4724	0.88	
Low SES	9941	0.88		
5	Mathematics	White	27352	0.91
		Native Hawaiian or Pacific Islander	11	0.86
		Hispanic or Latino	2518	0.89
		Black or African American	1370	0.90
		Asian	836	0.92
		American Indian or Alaskan Native	214	0.91
		LEP	1356	0.91
		IEP	5289	0.90
	Low SES	9638	0.90	
	Reading	White	27353	0.88
		Native Hawaiian or Pacific Islander	11	0.65
		Hispanic or Latino	2467	0.87
		Black or African American	1354	0.88
		Asian	818	0.87

(cont'd)

<i>Grade</i>	<i>Content</i>	<i>Subgroup</i>	<i>N</i>	<i>(α)</i>
5	Reading	American Indian or Alaskan Native	213	0.88
		LEP	1265	0.88
		IEP	5288	0.88
		Low SES	9596	0.88
	Writing	White	27290	0.74
		Native Hawaiian or Pacific Islander	11	0.53
		Hispanic or Latino	2465	0.76
		Black or African American	1347	0.76
		Asian	819	0.73
		American Indian or Alaskan Native	213	0.76
		LEP	1263	0.78
		IEP	5253	0.77
		Low SES	9553	0.76
		6	Mathematics	White
Native Hawaiian or Pacific Islander	9			0.95
Hispanic or Latino	2476			0.91
Black or African American	1374			0.91
Asian	794			0.93
American Indian or Alaskan Native	222			0.93
LEP	1196			0.91
IEP	5377			0.89
Low SES	9596		0.91	
Reading	White		27921	0.87
	Native Hawaiian or Pacific Islander		9	0.92
	Hispanic or Latino		2421	0.87
	Black or African American		1358	0.88
	Asian		786	0.87
	American Indian or Alaskan Native	223	0.91	
	LEP	1100	0.87	
	IEP	5388	0.87	
Low SES	9550	0.88		
7	Mathematics	White	28954	0.92
		Native Hawaiian or Pacific Islander	10	0.89
		Hispanic or Latino	2542	0.89
		Black or African American	1413	0.90
		Asian	753	0.93
		American Indian or Alaskan Native	150	0.89
		LEP	1002	0.91
		IEP	5709	0.89
	Low SES	9699	0.90	
	Reading	White	28972	0.88
		Native Hawaiian or Pacific Islander	10	0.78
		Hispanic or Latino	2486	0.88
		Black or African American	1398	0.88
		Asian	734	0.88
American Indian or Alaskan Native		150	0.91	
LEP		901	0.87	
IEP		5717	0.88	
Low SES	9658	0.88		

(cont'd)

<i>Grade</i>	<i>Content</i>	<i>Subgroup</i>	<i>N</i>	<i>(α)</i>
8	Mathematics	White	29907	0.92
		Native Hawaiian or Pacific Islander	16	0.90
		Hispanic or Latino	2706	0.89
		Black or African American	1407	0.89
		Asian	790	0.93
		American Indian or Alaskan Native	131	0.92
		LEP	921	0.90
		IEP	5655	0.87
		Low SES	9521	0.90
	Reading	White	29901	0.89
		Native Hawaiian or Pacific Islander	16	0.84
		Hispanic or Latino	2667	0.90
		Black or African American	1406	0.91
		Asian	778	0.90
		American Indian or Alaskan Native	132	0.89
		LEP	840	0.91
		IEP	5673	0.90
		Low SES	9484	0.90
	Writing	White	29818	0.74
		Native Hawaiian or Pacific Islander	16	0.77
		Hispanic or Latino	2643	0.76
		Black or African American	1393	0.76
		Asian	777	0.75
		American Indian or Alaskan Native	131	0.75
LEP		832	0.77	
IEP		5619	0.74	
Low SES		9422	0.75	
11	Mathematics	White	29562	0.91
		Native Hawaiian or Pacific Islander	15	0.90
		Hispanic or Latino	2207	0.86
		Black or African American	1231	0.87
		Asian	669	0.93
		American Indian or Alaskan Native	148	0.88
		LEP	692	0.88
		IEP	4926	0.83
		Low SES	6762	0.88
	Reading	White	29691	0.89
		Native Hawaiian or Pacific Islander	15	0.63
		Hispanic or Latino	2171	0.87
		Black or African American	1231	0.89
		Asian	661	0.90
		American Indian or Alaskan Native	150	0.90
		LEP	639	0.85
		IEP	4970	0.88
		Low SES	6771	0.89

¹Only subgroups with sample size ≥10 reported

Table N-2. 2008–09 NECAP: Reliability by Grade, Content, Item Type, and Form

<i>Grade</i>	<i>Content</i>	<i>Stat</i>	<i>Form1</i>	<i>Form2</i>	<i>Form3</i>	<i>Form4</i>	<i>Form5</i>	<i>Form6</i>	<i>Form7</i>	<i>Form8</i>	<i>Form9</i>
3	Mathematics	Form Alpha	0.94	0.94	0.95	0.95	0.94	0.94	0.94	0.94	0.94
		MC Alpha	0.63	0.60	0.68	0.71	0.61	0.67	0.62	0.59	0.67
		CR Alpha	0.47	0.55	0.56	0.55	0.52	0.51	0.42	0.49	0.49
		Item Type Alpha	0.98	0.98	0.99	0.99	0.98	0.98	0.99	0.99	0.99
		Common Alpha	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
		Matrix Alpha	0.71	0.74	0.76	0.77	0.72	0.74	0.70	0.72	0.75
		Admin Type Alpha	0.94	0.94	0.94	0.94	0.93	0.94	0.94	0.94	0.94
	Reading	Form Alpha	0.92	0.93	0.93	0.90	0.88	0.91	0.90	0.90	0.91
		MC Alpha	0.76	0.79	0.81	0.77	0.75	0.80	0.73	0.79	0.79
		CR Alpha	0.61	0.62	0.61	0.04	0.09	0.07	0.07	0.10	0.18
		Item Type Alpha	0.98	0.98	0.98	0.93	0.91	0.97	0.96	0.94	0.96
		Common Alpha	0.89	0.89	0.89	0.88	0.88	0.88	0.88	0.89	0.89
		Matrix Alpha	0.79	0.82	0.82	0.61	0.55	0.74	0.66	0.65	0.70
		Admin Type Alpha	0.92	0.93	0.93	0.81	0.79	0.85	0.84	0.83	0.84
4	Mathematics	Form Alpha	0.94	0.94	0.94	0.95	0.94	0.94	0.95	0.94	0.94
		MC Alpha	0.64	0.66	0.51	0.67	0.61	0.62	0.63	0.64	0.50
		CR Alpha	0.51	0.47	0.45	0.50	0.44	0.45	0.51	0.46	0.48
		Item Type Alpha	0.99	0.98	0.98	0.99	0.99	0.98	0.99	0.99	0.99
		Common Alpha	0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.93	0.93
		Matrix Alpha	0.73	0.72	0.65	0.75	0.68	0.69	0.74	0.72	0.67
		Admin Type Alpha	0.94	0.94	0.93	0.94	0.94	0.93	0.94	0.94	0.94
	Reading	Form Alpha	0.91	0.90	0.91	0.87	0.87	0.89	0.89	0.85	0.88
		MC Alpha	0.78	0.76	0.76	0.77	0.76	0.75	0.77	0.75	0.74
		CR Alpha	0.57	0.55	0.62	0.14	0.06	0.11	0.10	0.02	0.15
		Item Type Alpha	0.98	0.98	0.97	0.90	0.90	0.95	0.96	0.89	0.95
		Common Alpha	0.86	0.85	0.85	0.85	0.85	0.86	0.86	0.85	0.86
		Matrix Alpha	0.80	0.79	0.79	0.56	0.54	0.65	0.70	0.45	0.63
		Admin Type Alpha	0.91	0.90	0.91	0.76	0.75	0.80	0.82	0.74	0.81
5	Mathematics	Form Alpha	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
		MC Alpha	0.60	0.59	0.60	0.65	0.63	0.59	0.56	0.58	0.61
		OR Alpha	0.63	0.69	0.56	0.46	0.56	0.61	0.59	0.61	0.52
		Item Type Alpha	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99
		Common Alpha	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
		Matrix Alpha	0.74	0.78	0.71	0.68	0.72	0.73	0.73	0.75	0.72
		Admin Type Alpha	0.92	0.93	0.92	0.92	0.92	0.92	0.93	0.92	0.93

(cont'd)

Grade	Content	Stat	Form1	Form2	Form3	Form4	Form5	Form6	Form7	Form8	Form9	
5	Reading	Form Alpha	0.92	0.92	0.92	0.91	0.90	0.90	0.89	0.89	0.89	
		MC Alpha	0.79	0.76	0.75	0.81	0.74	0.78	0.68	0.75	0.69	
		CR Alpha	0.75	0.74	0.70	0.19	0.21	0.11	0.09	0.10	0.19	
		Item Type Alpha	0.98	0.98	0.98	0.94	0.94	0.95	0.94	0.93	0.94	
		Common Alpha	0.88	0.89	0.88	0.89	0.88	0.88	0.88	0.87	0.87	
		Matrix Alpha	0.82	0.80	0.79	0.69	0.64	0.69	0.59	0.64	0.61	
		Admin Type Alpha	0.92	0.92	0.92	0.83	0.82	0.82	0.82	0.81	0.81	
	Writing ¹	Form Alpha	0.72									
		MC Alpha	0.70									
		OR Alpha	0.59									
		Item Type Alpha	0.73									
		Common Alpha	0.72									
	6	Mathematics	Form Alpha	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
			MC Alpha	0.62	0.63	0.63	0.62	0.65	0.70	0.61	0.62	0.63
OR Alpha			0.63	0.66	0.55	0.66	0.56	0.70	0.52	0.63	0.40	
Item Type Alpha			0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.99	
Common Alpha			0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.93	
Matrix Alpha			0.77	0.77	0.74	0.77	0.73	0.81	0.73	0.77	0.71	
Admin Type Alpha			0.93	0.93	0.93	0.93	0.93	0.94	0.93	0.94	0.93	
Reading		Form Alpha	0.93	0.93	0.92	0.91	0.91	0.91	0.91	0.91	0.91	
		MC Alpha	0.77	0.78	0.67	0.79	0.77	0.78	0.78	0.80	0.76	
		CR Alpha	0.74	0.77	0.76	0.17	0.15	0.13	0.11	0.24	0.13	
		Item Type Alpha	0.98	0.98	0.98	0.94	0.94	0.95	0.95	0.94	0.94	
		Common Alpha	0.90	0.90	0.90	0.90	0.89	0.89	0.90	0.90	0.89	
		Matrix Alpha	0.80	0.81	0.75	0.70	0.66	0.68	0.69	0.68	0.65	
		Admin Type Alpha	0.93	0.93	0.92	0.84	0.84	0.84	0.84	0.83	0.83	
7	Mathematics	Form Alpha	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
		MC Alpha	0.65	0.61	0.62	0.61	0.53	0.62	0.64	0.64	0.60	
		OR Alpha	0.67	0.57	0.65	0.66	0.70	0.61	0.60	0.49	0.58	
		Item Type Alpha	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.98	0.99	
		Common Alpha	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
		Matrix Alpha	0.79	0.73	0.77	0.77	0.77	0.75	0.77	0.72	0.75	
		Admin Type Alpha	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
	Reading	Form Alpha	0.92	0.92	0.92	0.90	0.89	0.89	0.90	0.89	0.90	
		MC Alpha	0.76	0.74	0.75	0.77	0.66	0.69	0.75	0.75	0.76	
		CR Alpha	0.79	0.77	0.77	0.21	0.24	0.09	0.07	0.19	0.19	
		Item Type Alpha	0.98	0.98	0.98	0.93	0.92	0.93	0.94	0.92	0.92	
		Common Alpha	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
		Matrix Alpha	0.81	0.79	0.79	0.67	0.59	0.62	0.65	0.60	0.66	
		Admin Type Alpha	0.92	0.92	0.92	0.81	0.79	0.81	0.81	0.79	0.80	

(cont'd)

Grade	Content	Stat	Form1	Form2	Form3	Form4	Form5	Form6	Form7	Form8	Form9	
8	Mathematics	Form Alpha	0.95	0.94	0.94	0.94	0.94	0.95	0.94	0.94	0.94	
		MC Alpha	0.57	0.65	0.54	0.62	0.65	0.62	0.56	0.64	0.54	
		OR Alpha	0.71	0.67	0.64	0.60	0.58	0.73	0.66	0.59	0.59	
		Item Type Alpha	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.98
		Common Alpha	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
		Matrix Alpha	0.79	0.79	0.74	0.76	0.76	0.81	0.77	0.77	0.72	
		Admin Type Alpha	0.94	0.94	0.94	0.94	0.93	0.94	0.94	0.94	0.94	
	Reading	Form Alpha	0.93	0.92	0.92	0.89	0.89	0.89	0.89	0.89	0.89	
		MC Alpha	0.78	0.76	0.76	0.72	0.72	0.68	0.71	0.69	0.74	
		CR Alpha	0.78	0.80	0.79	0.19	0.22	0.10	0.07	0.20	0.22	
		Item Type Alpha	0.98	0.98	0.98	0.92	0.92	0.92	0.93	0.92	0.91	
		Common Alpha	0.89	0.89	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
		Matrix Alpha	0.82	0.81	0.82	0.60	0.63	0.57	0.62	0.60	0.64	
		Admin Type Alpha	0.93	0.92	0.92	0.80	0.79	0.80	0.80	0.79	0.78	
	Writing ¹	Form Alpha	0.76									
		MC Alpha	0.63									
		OR Alpha	0.70									
		Item Type Alpha	0.78									
		Common Alpha	0.76									
	11	Mathematics	Form Alpha	0.94	0.94	0.94	0.94	0.93	0.94	0.94	0.94	
			MC Alpha	0.61	0.51	0.59	0.54	0.37	0.55	0.63	0.49	
OR Alpha			0.65	0.59	0.53	0.61	0.61	0.56	0.56	0.47		
Item Type Alpha			0.98	0.98	0.99	0.99	0.98	0.99	0.99	0.99		
Common Alpha			0.93	0.93	0.93	0.92	0.92	0.93	0.93	0.93		
Matrix Alpha			0.78	0.72	0.72	0.74	0.67	0.73	0.75	0.67		
Admin Type Alpha			0.93	0.93	0.93	0.93	0.93	0.93	0.94	0.93		
Reading		Form Alpha	0.93	0.93	0.91	0.90	0.91	0.91	0.91	0.91		
		MC Alpha	0.78	0.79	0.78	0.72	0.79	0.78	0.77	0.75		
		CR Alpha	0.84	0.85	0.18	0.19	0.17	0.11	0.12	0.13		
		Item Type Alpha	0.98	0.98	0.94	0.94	0.94	0.95	0.95	0.95		
		Common Alpha	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89		
		Matrix Alpha	0.84	0.84	0.69	0.65	0.70	0.71	0.70	0.70		
		Admin Type Alpha	0.93	0.93	0.83	0.82	0.83	0.84	0.84	0.84		

MC = multiple-choice; OR = open response; CR = constructed response; All = MC, OR, and CR All α = common and matrix items; MC α = MC items only; CR α = CR items only; OR = OR α items only; Frmt Strat = stratified by MC/OR; Com alpha = common items only¹Writing tests had only one form

**Table N-3. 2008–09 NECAP: Common Item Reporting
Category Alpha Reliabilities, with Points Possible, by Grade and Content**

<i>Grade</i>	<i>Content</i>	<i>Reporting Category</i>	<i>Points Possible</i>	<i>α</i>
3	Mathematics	Number & Operations	35	0.89
		Geometry & Measurement	10	0.62
		Functions & Algebra	10	0.62
		Data, Statistics, & Probability	10	0.74
	Reading	Word ID/Vocabulary	20	0.76
		Literary	16	0.71
		Informational	16	0.69
		Initial Understanding	19	0.78
		Analysis & Interpretation	13	0.56
4	Mathematics	Number & Operations	32	0.87
		Geometry & Measurement	13	0.69
		Functions & Algebra	10	0.76
		Data, Statistics, & Probability	10	0.72
	Reading	Word ID/Vocabulary	19	0.68
		Literary	16	0.65
		Informational	17	0.67
		Initial Understanding	19	0.68
		Analysis & Interpretation	14	0.63
5	Mathematics	Number & Operations	30	0.83
		Geometry & Measurement	13	0.63
		Functions & Algebra	13	0.63
		Data, Statistics, & Probability	10	0.66
	Reading	Word ID/Vocabulary	10	0.71
		Literary	21	0.75
		Informational	21	0.71
		Initial Understanding	18	0.73
		Analysis & Interpretation	24	0.73
Writing	Structures of Language & Writing Conventions	10	0.70	
	Short Responses	12	0.72	
	Extended Responses	15	0.06	
6	Mathematics	Number & Operations	26	0.86
		Geometry & Measurement	17	0.73
		Functions & Algebra	13	0.66
		Data, Statistics, & Probability	10	0.63
6	Reading	Word ID/Vocabulary	10	0.72
		Literary	21	0.79
		Informational	21	0.75
		Initial Understanding	19	0.76
		Analysis & Interpretation	23	0.78
7	Mathematics	Number & Operations	20	0.82
		Geometry & Measurement	16	0.66
		Functions & Algebra	20	0.80
		Data, Statistics, & Probability	10	0.61
	Reading	Word ID/Vocabulary	10	0.63
		Literary	21	0.75
		Informational	21	0.75
		Initial Understanding	19	0.72
		Analysis & Interpretation	23	0.78

(cont'd)

<i>Grade</i>	<i>Content</i>	<i>Reporting Category</i>	<i>Points Possible</i>	<i>α</i>
8	Mathematics	Number & Operations	13	0.69
		Geometry & Measurement	17	0.75
		Functions & Algebra	26	0.86
		Data, Statistics, & Probability	10	0.63
	Reading	Word ID/Vocabulary	10	0.64
		Literary	21	0.79
		Informational	21	0.71
		Initial Understanding	18	0.71
		Analysis & Interpretation	24	0.78
	Writing	Structures of Language & Writing Conventions	10	0.63
		Short Responses	12	0.76
		Extended Responses	15	0.24
11	Mathematics	Number & Operations	10	0.63
		Geometry & Measurement	19	0.79
		Functions & Algebra	26	0.85
		Data, Statistics, & Probability	9	0.65
	Reading	Word ID/Vocabulary	10	0.62
		Literary	21	0.77
		Informational	21	0.78
		Initial Understanding	18	0.74
		Analysis & Interpretation	24	0.80

