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**Table E-1 Maximum Likelihood Estimates of American Indian Test Score Improvement 1998-2000  
( School Level )**

	Model 1		Model 2		Model 3	
	3 year	2 year	3 year	2 year	3 year	2 year
<b>Mathematics</b>						
Intercept	-2.0233 *	-0.6624	-1.3696 *	-0.0441	-1.8964 *	-0.2440
	(12.017)	(2.515)	(17.867)	(0.362)	(20.715)	(0.816)
School math top quintile	-0.0711	0.1278	-0.3722	-0.1085		
	(0.010)	(0.083)	(0.297)	(0.066)		
Middle / Jr. High school	0.1956	0.457	0.0085	0.1942		
	(0.167)	(1.730)	(0.000)	(0.382)		
% Indian in school	0.0021	0.0102			0.0009	0.0069
	(0.034)	(0.951)			(0.006)	(0.497)
Free/reduced priced lunch	0.0129	0.0103			0.0125	0.0069
	(1.491)	(0.174)			(1.595)	(0.965)
Chi-square statistics	2.259	4.295	0.328	0.401	2.088	2.386
Significance level	0.6883	0.3675	0.8489	0.8184	0.352	0.3033
Concordant	58.4%	57.8%	31.9	34.1%	59.4	55.7%
Mean of dependent variable	0.1957	0.5116	0.1957	0.5116	0.1957	0.5116
Number of observations	138	172	138	172	138	172
<b>Reading</b>						
Intercept	-1.5994 *	0.1270	-1.1699 *	0.4068	-1.1649 *	0.3366
	(7.944)	(0.085)	(14.403)	(2.885)	(10.066)	(1.453)
School reading top quintile	0.1270	-0.4190	0.0336	-0.5173		
	(0.049)	(0.965)	(0.004)	(1.626)		
Middle / Jr. High school	0.4702	0.4577	0.1142	0.3148		
	(0.998)	(1.640)	(0.077)	(0.933)		
% Indian in school	0.0230 *	0.0087			0.0197	0.0062
	(4.385)	(0.654)			(3.655)	(0.362)
Free/reduced priced lunch	-0.0015	0.0033			-0.0044	0.0028
	(0.020)	(0.169)			(0.211)	(0.144)
Chi-square statistics	5.068	3.306	0.094	2.260	3.919	0.826
Significance level	0.2809	0.5080	0.9541	0.3231	0.1409	0.6616
Concordant	65.9%	58.3%	63.6%	40.1%	60.0%	54.4%
Mean of dependent variable	0.2500	0.6140	0.2500	0.6140	0.2500	0.6140
Number of observations	136	171	136	171	136	171

model 1 : independent variables are school math/reading top quintile, % of own minority student in school, school free/reduced priced lunch, dummy variable for high school

model 2 : independent variables are school math/reading top quintile, dummy variable for high school

model 3 : independent variables are % of own minority student in school, school free/reduced priced lunch

3 year : 1998 score < 1999 score < 2000 score

2 year : 1998 score < 2000 score

\*significant at 95% significance level

chi-square statistics are in parentheses

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1998, 1999 and 2000

**Table E-2 Maximum Likelihood Estimates of Asian Test Score Improvement 1998-2000 ( School Level )**

	Model 1		Model 2		Model 3	
	3 year	2 year	3 year	2 year	3 year	2 year
<b>Mathematics</b>						
Intercept	-1.9141 *	-0.1170	-1.2402 *	0.6953 *	-1.8119 *	-0.2054
	(10.583)	(0.067)	(9.486)	(5.547)	(36.144)	(0.766)
School math top quintile	-0.0893	-0.1579	-0.3893	-0.4872		
	(0.033)	(0.201)	(0.799)	(2.264)		
Middle / Jr. High school	0.1661	-0.0025	-0.0020	-0.2320		
	(0.113)	(0.000)	(0.000)	(0.450)		
% Asian in school	0.0522	0.0224			0.0524	0.0212
	(3.650)	(0.754)			(3.747)	(0.688)
Free/reduced priced lunch	0.0011	0.0178			0.0011	0.0198 *
	(0.006)	(2.605)			(0.008)	(4.263)
Chi-square statistics	9.476	11.351	0.865	3.358	9.337	11.149
Significance level	0.0602	0.0229	0.6490	0.1865	0.0094	0.0038
Concordant	58.0%	61.4%	25.1%	39.4%	59.2%	61.4%
Mean of dependent variable	0.2047	0.5930	0.2047	0.5930	0.2047	0.5930
Number of observations	171	199	171	199	171	199
<b>Reading</b>						
Intercept	-1.7011 *	0.0868	-1.0469 *	0.8205 *	-0.9057 *	0.4376
	(9.567)	(0.029)	(7.800)	(7.314)	(12.977)	(2.676)
School reading top quintile	0.7120	0.1420	0.3707	-0.0820		
	(2.964)	(0.138)	(1.085)	(0.054)		
Middle / Jr. High school	0.4006	0.2855	0.1932	0.1587		
	(0.810)	(0.478)	(0.209)	(0.191)		
% Asian inschool	-0.0190	0.1021 *			-0.0093	0.1060 *
	(0.592)	(6.587)			(0.154)	(7.111)
Free/reduced priced lunch	0.0205	0.0053			0.0079	0.0002
	(2.712)	(0.199)			(0.579)	(0.001)
Chi-Square statistics	4.571	14.243	1.538	0.208	0.612	13.589
Significance level	0.3342	0.0066	0.4634	0.9014	0.7364	0.0011
Concordant	59.2%	63.3%	37.3%	34.5%	48.9%	63.1%
Mean of dependent variable	0.3158	0.7136	0.3158	0.7136	0.3158	0.7136
Number of observations	171	199	171	199	171	199

model 1 : independent variables are school math/reading top quintile, % of own minority student in school, school free/reduced priced lunch, dummy variable for high school

model 2 : independent variables are school math/reading top quintile, dummy variable for high school

model 3 : independent variables are % of own minority student in school, school free/reduced priced lunch

3 year : 1998 score < 1999 score < 2000 score

2 year : 1998 score < 2000 score

\*significant at 95% significance level

chi-square statistics are in parentheses

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1998, 1999 and 2000

**Table E-3 Maximum Likelihood Estimates of Hispanic Test Score Improvement 1998-2000 (School Level)**

	Model 1		Model 2		Model 3	
	3 year	2 year	3 year	2 year	3 year	2 year
<b>Mathematics</b>						
Intercept	-0.6880 (1.517)	0.0571 (0.021)	-1.0922 * (10.588)	0.3501 (1.874)	-1.4800 * (22.209)	-0.2348 (1.013)
School math top quintile	-0.2625 (0.258)	0.0551 (0.025)	-0.0786 (0.026)	-0.0603 (0.034)		
Middle/Jr. High school	-0.7347 (2.426)	-0.3716 (1.318)	-0.6381 (2.182)	-0.4771 (2.345)		
% Hispanic in school	0.0130 (0.243)	0.0246 (0.920)			0.0219 (0.749)	0.0277 (1.203)
Free/reduced priced lunch	-0.0138 (1.153)	0.0038 (0.197)			-0.0067 (0.371)	0.0054 (0.492)
Chi-square statistics	3.686	4.377	2.441	2.636	0.762	3.051
Significance level	0.4501	0.3574	0.2950	0.2677	0.6833	0.2175
Concordant	59.8%	57.0%	41.4%	38.9%	52.1%	54.6%
Mean of dependent variable	0.1751	0.5025	0.1751	0.5025	0.1751	0.5025
Number of observations	177	201	177	201	177	201
<b>Reading</b>						
Intercept	-1.5904 * (9.810)	0.5847 (2.028)	-1.0486 * (9.721)	0.6599 * (5.923)	-1.1848 * (18.851)	0.4206 (2.995)
School reading top quintile	0.3555 (0.659)	-0.1847 (0.243)	0.1586 (0.160)	-0.1854 (0.293)		
Middle/Jr. High school	0.2391 (0.290)	-0.0742 (0.046)	0.0028 (0.000)	-0.1451 (0.187)		
% Hispanic in school	0.0283 (1.392)	0.0550 (2.374)			0.0241 (1.124)	0.0567 (2.511)
Free/reduced priced lunch	0.0067 (0.491)	-0.0062 (0.518)			0.0026 (0.090)	-0.0041 (0.275)
Chi-square statistics	3.039	4.141	0.178	0.666	1.862	3.805
Significance level	0.5513	0.3872	0.9150	0.7169	0.3941	0.1492
Concordant	57.9%	54.6%	33.0%	36.3%	52.5%	53.9%
Mean of dependent variable	0.2686	0.6244	0.2686	0.6244	0.2686	0.6244
Number of Observations	175	197	175	197	175	197

model 1 : independent variables are school math/reading top quintile, % of own minority student in school, school free/reduced priced lunch, dummy variable for high school

model 2 : independent variables are school math/reading top quintile, dummy variable for high school

model 3 : independent variables are % of own minority student in school, school free/reduced priced lunch

3 year : 1998 score < 1999 score < 2000 score

2 year : 1998 score < 2000 score

\*significant at 95% significance level

chi-square statistics are in parentheses

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1998, 1999 and 2000

**Table E-4 Maximum Likelihood Estimates of African American Test Score Improvement 1998-2000  
( School Level )**

	Model 1		Model 2		Model 3	
	3 year	2 year	3 year	2 year	3 year	2 year
<b>Mathematics</b>						
Intercept	-1.8922 *	-0.4911	-0.7589 *	0.6150	-1.4990 *	-0.2047
	(9.243)	(0.842)	(4.726)	(3.785)	(24.923)	(0.687)
School math top quintile	-0.3762	-0.4026	-0.8037	-0.7653 *		
	(0.510)	(0.965)	(2.821)	(4.133)		
Middle/Jr. High school	0.5896	0.5106	0.0129	-0.0896		
	(1.322)	(1.281)	(0.001)	(0.055)		
% Black in school	0.0069	0.0155			0.0029	0.0120
	(0.303)	(1.144)			(0.057)	(0.710)
Free/reduced priced lunch	0.0152	0.0140			0.0155	0.0146
	(2.017)	(1.552)			(2.558)	(2.107)
Chi-square statistics	9.005	13.408	3.255	4.876	7.176	11.299
Significance level	0.0610	0.0094	0.1964	0.0873	0.0276	0.0035
Concordant	64.1%	66.5%	39.7%	40.9%	58.9%	63.1%
Mean of dependent variable	0.2808	0.5839	0.2808	0.5839	0.2808	0.5839
Number of observations	146	161	146	161	146	161
<b>Reading</b>						
Intercept	-1.3196 *	0.3733	-0.6029	1.1408 *	-0.8467 *	0.4404
	(4.900)	(0.407)	(3.052)	(10.743)	(9.579)	(2.864)
School reading top quintile	-0.0060	0.0315	-0.1947	-0.1771		
	(0.000)	(0.006)	(0.223)	(0.214)		
Middle/Jr. High school	0.4952	0.0499	-0.0050	-0.4574		
	(0.966)	(0.010)	(0.000)	(1.218)		
% Black in school	0.0226	0.0842 *			0.0193	0.0844 *
	(2.918)	(8.244)			(2.333)	(8.316)
Free/reduced priced lunch	-0.0016	-0.0138			-0.0034	-0.0146
	(0.020)	(1.128)			(0.112)	(1.634)
Chi-square statistics	5.261	19.93	0.252	1.941	4.255	19.913
Significance level	0.2615	0.0005	0.8815	0.3788	0.1192	0.0001
Concordant	61.2%	69.9%	23.0%	39.2%	59.3%	69.8%
Mean of dependent variable	0.3403	0.6790	0.3403	0.6790	0.3403	0.6790
Number of observations	144	162	144	162	144	162

model 1 : independent variables are school math/reading top quintile, % of own minority student in school, school free/reduced priced lunch, dummy variable for high school

model 2 : independent variables are school math/reading top quintile, dummy variable for high school

model 3 : independent variables are % of own minority student in school, school free/reduced priced lunch

3 year : 1998 score < 1999 score < 2000 score

2 year : 1998 score < 2000 score

\*significant at 95% significance level

chi-square statistics are in parentheses

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1998, 1999 and 2000

**Table E-5 Maximum Likelihood Estimates of Caucasian Test Score Improvement 1998-2000  
( School Level )**

	Model 1		Model 2		Model 3	
	3 year	2 year	3 year	2 year	3 year	2 year
<b>Mathematics</b>						
Intercept	-2.6446 *	0.2263	-1.4639 *	-0.0385	-2.7634 *	-0.2444
	(8.010)	(0.119)	(74.476)	(0.086)	(10.238)	(0.164)
School math top quintile	-0.3776	0.3086	-0.3570	0.2116		
	(1.346)	(1.762)	(1.277)	(0.900)		
Middle/Jr. High school	-0.0148	-0.4407 *	-0.1145	-0.4756 *		
	(0.003)	(4.411)	(0.192)	(5.842)		
% White in school	0.0106	-0.0049			0.0099	-0.0017
	(1.581)	(0.685)			(1.468)	(0.088)
Free/reduced priced lunch	0.0067	0.0039			0.0086	0.0068
	(0.782)	(0.470)			(1.596)	(1.658)
Chi-square statistics	3.541	8.530	1.775	6.127	2.104	2.932
Significance level	0.4717	0.0740	0.4116	0.0460	0.3493	0.2309
Concordant	57.2%	57.5%	37.0%	40.0%	55.9%	53.3%
Mean of dependent variable	0.1689	0.4535	0.1689	0.4535	0.1689	0.4535
Number of observations	450	452	450	452	450	452
<b>Reading</b>						
Intercept	0.0337	1.8213	-0.3725 *	1.7700 *	1.0809	2.7716 *
	(0.002)	(3.723)	(7.565)	(82.121)	(2.660)	(9.333)
School reading top quintile	-0.3105	1.1526	-0.1641	1.4395 *		
	(1.746)	(3.386)	(0.533)	(5.512)		
Middle/Jr. High school	0.8267 *	0.8217 *	0.9690 *	0.9522 *		
	(14.958)	(3.974)	(23.651)	(5.858)		
% White in school	0.0008	0.0070			-0.0055	0.0044
	(0.017)	(0.742)			(0.759)	(0.306)
Free/reduced priced lunch	-0.0127 *	-0.0152			-0.0201 *	-0.0237 *
	(4.326)	(3.090)			(12.539)	(8.055)
Chi-square statistics	30.84	24.187	24.441	16.606	14.654	14.848
Significance level	0.0001	0.0001	0.0001	0.0002	0.0007	0.0006
Concordant	64.7%	72.1%	46.8%	48.5%	59.8%	65.7%
Mean of dependent variable	0.5000	0.9093	0.5000	0.9093	0.5000	0.9093
Number of observations	448	452	448	452	448	452

model 1 : independent variables are school math/reading top quintile, % of own minority student in school, school free/reduced priced lunch, dummy variable for high school

model 2 : independent variables are school math/reading top quintile, dummy variable for high school

model 3 : independent variables are % of own minority student in school, school free/reduced priced lunch

3 year : 1998 score < 1999 score < 2000 score

2 year : 1998 score < 2000 score

\*significant at 95% significance level

chi-square statistics are in parentheses

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1998, 1999 and 2000

**Table E-6 Maximum Likelihood Estimates of Test Score Improvement 1998-2000 : Stepwise ( School Level, Mathematics )**

	Overall		American Indian		Asian		Hispanic		African American		Caucasin	
	3 year	2 year	3 year	2 year	3 year	2 year	3 year	2 year	3 year	2 year	3 year	2 year
Intercept	-2.3634 *	-0.7831 *	-1.4137 *	0.0465	-2.0460 *	-0.1982	-1.5496 *	-0.2432	-1.5105 *	-0.2493	-1.8939 *	-0.6199 *
	(96.817)	(22.726)	(43.403)	(0.093)	(48.591)	(0.726)	(61.403)	(2.288)	(25.932)	(1.049)	(96.647)	(18.476)
School math top quintile												
School math bottom quintile												
School reading top quintile												
School reading bottom quintile												0.8915 *
												(6.115)
% Indian in school												
% Asian in school	0.0724 *	0.0448 *			0.0629 *							
	(16.738)	(6.162)			(10.137)							
% Hispanic in school												
% Black in school		0.0243 *										
		(9.012)										
Charter school												
Middle / Jr. High school												
Rural area	1.1322 *	0.9102 *			1.1743 *						0.5766 *	0.7469 *
	(16.124)	(18.895)			(4.867)						(5.092)	(14.322)
Urban area								1.2241 *				
								(10.669)				
Free/reduced price lunch						0.0242 *			0.0172 *	0.021 *		
						(8.833)			(7.071)	(9.144)		
Chi-square statistics	26.763	31.336	3.561	3.566	13.795	10.424		11.733	7.12	10.533	5.478	17.841
Significance level	0.0001	0.0001	0.0592	0.059	0.001	0.0012		0.0006	0.0076	0.0012	0.0228	0.0001
Concordant	58.5%	59.2%			66.0%	61.4%		27.9%	59.1%	62.6%	32.6%	40.2%
Mean of dependent variable	0.1812	0.4755	0.1957	0.5116	0.2047	0.5930	0.1751	0.5025	0.2808	0.5839	0.1689	0.4535
Number of observations	469	469	138	172	171	199	177	201	146	161	450	452

3 year : 1998 score < 1999 score < 2000 score

2 year : 1998 score < 2000 score

chi-square statistics are in parentheses

\*significant at 95% significance level

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1998, 1999 and 2000

**Table E-7 Maximum Likelihood Estimates of Test Score Improvement 1998-2000 : Stepwise ( School Level, Reading )**

	Overall		American Indian		Asian		Hispanic		African American		Caucasin	
	3 year	2 year	3 year	2 year	3 year	2 year	3 year	2 year	3 year	2 year	3 year	2 year
<b>Intercept</b>	-0.4266 *	1.6232 *	-1.0986 *	0.4796 *	-0.9116 *	0.5922 *	-1.1394 *	0.8711 *	-0.9034 *	0.2942	-0.3102 *	2.9039 *
	(12.005)	(76.756)	(30.777)	(9.233)	(25.492)	(7.389)	(39.343)	(18.516)	(17.386)	(1.805)	(5.384)	(71.896)
<b>School math top quintile</b>								-0.6757 *				
								(4.048)				
<b>School math bottom quintile</b>									-1.9884 *		-0.9541 *	
									(4.174)		(5.015)	
<b>School reading top quintile</b>		1.2791 *										1.2328 *
		(5.655)										(3.918)
<b>School reading bottom quintile</b>							1.9867 *					
							(7.752)					
<b>% Indian in school</b>												
<b>% Asian in school</b>						0.1366 *						
						(10.342)						
<b>% Hispanic in school</b>		-0.0296 *				-0.1245 *						
		(4.683)				(3.847)						
<b>% Black in school</b>								0.0160	-1.0855 *			
								(0.040)	(3.874)			
<b>Charter school</b>												
<b>Middle / Jr. High school</b>	0.8833 *	1.0774 *									0.8724 *	
	(21.384)	(8.508)									(19.174)	
<b>Rural area</b>					1.0069 *							
					(4.536)							
<b>Urban area</b>												
<b>Free/reduced price lunch</b>												-0.0222 *
												(10.218)
<b>Chi-square statistics</b>	21.929	28.158		2.715	4.483	17.494	8.651	8.277	4.141	26.629	29.512	19.753
<b>Significance level</b>	0.0001	0.0001		0.0994	0.0342	0.0002	0.0033	0.0118	0.0418	0.0001	0.0001	0.0001
<b>Concordant</b>	36.0%	61.2%			18.6%	67.8%	14.2%	41.1%	58.3%	70.8%	42.4%	67.6%
<b>Mean of dependent variable</b>	0.4851	0.8851	0.2500	0.6176	0.3158	0.7136	0.2686	0.6244	0.3403	0.6790	0.5000	0.9093
<b>Number of observations</b>	470	470	136	170	171	199	175	197	144	162	448	452

3 year : 1998 score < 1999 score < 2000 score

2 year : 1998 score < 2000 score

chi-square statistics are in parentheses

\*significant at 95% significance level

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1998, 1999 and 2000

**Table E-8 Maximum Likelihood Estimates of American Indian Test Score Improvement 1996-1999  
( School Level )**

	Model 1		Model 2		Model 3	
	4 year	2 year	4 year	2 year	4 year	2 year
<b>Mathematics</b>						
Intercept		-0.3755 (0.492)		-0.0048 (0.000)		0.0077 (0.001)
School math top quintile		1.4253 * (5.476)		1.2794 * (4.840)		
Middle / Jr. High school		-0.1481 (0.118)		-0.2719 (0.494)		
% Indian in school		-0.0032 (0.084)				-0.0018 (0.029)
Free/reduced price lunch		0.0093 (0.694)				0.00132 (0.018)
Chi-square statistics		6.089		5.378		0.031
Significance level		0.1926		0.0679		0.9847
Concordant		62.4%		41.9%		44.6%
Mean of dependent variable	0.0000	0.5082	0.0000	0.5082	0.0000	0.5082
Number of observations	64	122	64	122	64	122
<b>Reading</b>						
Intercept	-8.2432 (0.015)	0.4363 (0.531)	-2.9957 * (8.547)	0.6237 * (4.680)	-8.1167 (0.044)	0.8387 * (4.982)
School reading top quintile	-1.6735 (0.000)	-0.1231 (0.044)	-8.1773 (0.001)	-0.1684 (0.091)		
Middle / Jr. High school	0.9022 (0.000)	0.5003 (1.121)	-10.6944 (0.003)	0.3092 (0.570)		
% Indian in school	0.3612 (0.091)	0.0201 (1.743)			0.3588 (0.105)	0.0176 (1.474)
Free/reduced price lunch	-0.2613 (0.050)	-0.0035 (0.079)			-0.2600 (0.054)	-0.0075 (0.474)
Chi-square statistics	10.028	2.918	1.992	0.592	10.028	1.759
Significance level	0.0400	0.5716	0.3694	0.7438	0.0066	0.4150
Concordant	100.0%	58.0%	63.6%	35.7%	100.0%	50.6%
Mean of dependent variable	0.0179	0.6810	0.0179	0.6810	0.0179	0.6810
Number of observations	56	116	56	116	56	116

model 1 : independent variables are school math/reading top quintile, % of own minority student in school, school free/reduced price lunch, dummy variable for high school

model 2 : independent variables are school math/reading top quintile, dummy variable for high school

model 3 : independent variables are % of own minority student in school, school free/reduced price lunch

4 year : 1996 score < 1997 score < 1998 score < 1999

2 year : 1996 score < 1999 score

\*significant at 95% significance level

chi-square statistics are in parentheses

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1996, 1997, 1998, and 1999.

**Table E-9 Maximum Likelihood Estimates of Asian Test Score Improvement 1996-1999 ( School Level )**

	Model 1		Model 2		Model 3	
	4 year	2 year	4 year	2 year	4 year	2 year
<b>Mathematics</b>						
Intercept	-2.6516 *	0.0316	-2.0869 *	0.0728	-2.0307 *	0.4888
	(7.624)	(0.004)	(7.751)	(0.046)	(19.623)	(2.776)
School math top quintile	-0.3880	0.2493	-0.6336	0.2322		
	(0.288)	(0.351)	(0.969)	(0.368)		
Middle / Jr. High school	0.9020	0.3454	0.7750	0.3362		
	(1.150)	(0.706)	(0.881)	(0.711)		
% Asian in school	0.0315	0.0017			0.0238	0.0039
	(0.263)	(0.002)			(0.154)	(0.009)
Free/reduced price lunch	0.0087	0.0010			0.0106	-0.0052
	(0.179)	(0.005)			(0.326)	(0.194)
Chi-square statistics	2.672	1.344	1.627	1.333	1.215	0.208
Significance level	0.6141	0.8538	0.4432	0.5136	0.5446	0.9013
Concordant	63.0%	51.1%	40.0%	38.1%	51.8%	54.4%
Mean of dependent variable	0.1613	0.5971	0.1613	0.5971	0.1613	0.5971
Number of observations	93	139	93	139	93	139
<b>Reading</b>						
Intercept	-3.1841 *	0.8349	-2.1425 *	0.5510	-1.4231 *	1.3940 *
	(9.798)	(1.885)	(8.043)	(2.338)	(12.017)	(15.392)
School reading top quintile	0.9136	-0.1026	0.4824	0.0887		
	(1.961)	(0.042)	(0.818)	(0.040)		
Middle / Jr. High school	1.1246	0.7196	0.8706	0.8393		
	(1.716)	(2.448)	(1.121)	(3.682)		
% Asian inschool	0.0736	0.0903			0.0683	0.0919
	(1.509)	(2.752)			(1.382)	(2.910)
Free/reduced price lunch	0.0096	-0.0228			-0.0092	-0.0274 *
	(0.221)	(2.292)			(0.225)	(4.348)
Chi-Square statistics	6.403	7.847	2.862	3.875	1.539	5.418
Significance level	0.171	0.0973	0.2390	0.1440	0.4634	0.0666
Concordant	64.9%	64.4%	42.1%	43.2%	60.0%	61.2%
Mean of dependent variable	0.2299	0.7012	0.3158	0.7136	0.3158	0.7136
Number of observations	87	134	171	199	171	199

model 1 : independent variables are school math/reading top quintile, % of own minority student in school, school free/reduced price lunch, dummy variable for high school

model 2 : independent variables are school math/reading top quintile, dummy variable for high school

model 3 : independent variables are % of own minority student in school, school free/reduced price lunch

4 year : 1996 score < 1997 score < 1998 score < 1999

2 year : 1996 score < 1999 score

\*significant at 95% significance level

chi-square statistics are in parentheses

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1996, 1997, 1998, and 1999.

**Table E-10 Maximum Likelihood Estimates of Hispanic Test Score Improvement 1999-1999 (School Level)**

	Model 1		Model 2		Model 3	
	4 year	2 year	4 year	2 year	4 year	2 year
<b>Mathematics</b>						
Intercept	-11.8731 (0.004)	-0.3723 (0.343)	-13.3701 (0.004)	0.1344 (0.128)	-2.0644 (3.745)	-0.3297 (1.222)
School math top quintile	-0.0111 (0.031)	1.3225 * (9.259)	1.2465 (0.991)	1.1424 * (8.187)		
Middle/Jr. High school	8.8663 (0.002)	-0.6984 (1.996)	9.6812 (0.002)	-0.8634 (3.838)		
% Hispanic in school	-0.1586 (0.176)	-0.0143 (0.128)			-0.1850 (0.241)	-0.0046 (0.015)
Free/reduced price lunch	-0.0111 (0.031)	0.0156 (1.454)			-0.0418 (0.423)	0.0071 (0.408)
Chi-square statistics	2.532	11.933	2.169	10.465	1.716	0.431
Significance level	0.6389	0.0179	0.3381	0.0053	0.4240	0.8060
Concordant	73.7%	64.2%	52.2%	47.9%	64.0%	46.1%
Mean of dependent variable	0.0380	0.4559	0.0380	0.4559	0.0380	0.4559
Number of observations	79	136	79	136	79	136
<b>Reading</b>						
Intercept	-5.8929 * (7.129)	-0.1623 (0.051)	-2.3979 * (5.271)	0.7344 (3.299)	-4.4226 * (18.513)	0.4797 (2.099)
School reading top quintile	-11.3453 (0.002)	0.9060 (3.453)	-11.7469 (0.005)	0.7149 (2.534)		
Middle/Jr. High school	2.0940 (1.621)	0.1328 (0.061)	0.6061 (0.277)	-0.3014 (0.418)		
% Hispanic in school	0.2151 * (4.854)	0.1256 (2.835)			0.1779 * (4.329)	0.1132 (2.661)
Free/reduced price lunch	0.0288 (1.456)	0.0059 (0.174)			0.0329 (2.120)	-0.0051 (0.179)
Chi-square statistics	14.964	4.494	6.055	2.767	10.711	3.279
Significance level	0.0048	0.3432	0.0484	0.2507	0.0047	0.1941
Concordant	82.8%	55.3%	53.2%	38.9%	69.9%	56.4%
Mean of dependent variable	0.0811	0.6667	0.2743	0.6212	0.2743	0.6212
Number of Observations	74	129	175	198	175	198

model 1 : independent variables are school math/reading top quintile, % of own minority student in school, school free/reduced price lunch, dummy variable for high school

model 2 : independent variables are school math/reading top quintile, dummy variable for high school

model 3 : independent variables are % of own minority student in school, school free/reduced price lunch

4 year : 1996 score < 1997 score < 1998 score < 1999

2 year : 1996 score < 1999 score

\*significant at 95% significance level

chi-square statistics are in parentheses

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1996, 1997, 1998, and 1999.

**Table E-11 Maximum Likelihood Estimates of African American Test Score Improvement 1996-1999  
( School Level )**

	Model 1		Model 2		Model 3	
	4 year	2 year	4 year	2 year	4 year	2 year
<b>Mathematics</b>						
Intercept	-13.6732 (0.004)	-0.3017 (0.161)	-13.6768 (0.004)	-0.3843 (0.831)	-3.1595 * (6.529)	-0.4568 (1.690)
School math top quintile	0.6280 (0.114)	0.2621 (0.257)	0.4643 (0.104)	0.2826 (0.394)		
Middle/Jr. High school	9.8380 (0.002)	-0.3257 (0.339)	10.1214 (0.002)	-0.2574 (0.280)		
% Black in school	-0.0511 (0.098)	-0.0055 (0.063)			-0.0450 (0.101)	-0.0021 (0.010)
Free/reduced price lunch	0.0281 (0.064)	0.0015 (0.005)			-0.0044 (0.003)	-0.0003 (0.000)
Chi-square statistics	1.253	0.688	1.131	0.571	0.600	0.052
Significance level	0.8693	0.9528	0.5680	0.7515	0.7407	0.9745
Concordant	62.2%	50.1%	46.6%	36.5%	36.5%	41.6%
Mean of dependent variable	0.0263	0.3800	0.0263	0.3800	0.0263	0.3800
Number of observations	76	100	76	100	76	100
<b>Reading</b>						
Intercept	-21.2993 (0.013)	-1.0682 (0.926)	-13.1338 (0.006)	1.2822 * (6.418)	-2.8752 * (18.607)	0.6666 (2.386)
School reading top quintile	1.1907 (0.859)	1.1536 (3.256)	-1.1618 (1.839)	0.4803 (0.765)		
Middle/Jr. High school	16.3324 (0.008)	0.8840 (1.299)	11.9443 (0.005)	-0.4607 (0.622)		
% Black in school	-0.1094 (2.272)	0.0866 (2.756)			-0.0265 (0.605)	0.0860 (3.096)
Free/reduced price lunch	0.1654 * (4.513)	0.0259 (0.744)			0.0421 (2.398)	-0.0074 (0.102)
Chi-square statistics	20.138	13.830	7.526	1.180	3.840	9.474
Significance level	0.0005	0.0079	0.0232	0.5543	0.1466	0.0088
Concordant	87.8%	70.4%	54.6%	39.4%	70.1%	71.4%
Mean of dependent variable	0.1286	0.7447	0.1286	0.7447	0.1286	0.7447
Number of observations	70	94	70	94	70	94

model 1 : independent variables are school math/reading top quintile, % of own minority student in school, school free/reduced price lunch, dummy variable for high school

model 2 : independent variables are school math/reading top quintile, dummy variable for high school

model 3 : independent variables are % of own minority student in school, school free/reduced price lunch

4 year : 1996 score < 1997 score < 1998 score < 1999

2 year : 1996 score < 1999 score

\*significant at 95% significance level

chi-square statistics are in parentheses

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1996, 1997, 1998, and 1999.

**Table E-12 Maximum Likelihood Estimates of Caucasian Test Score Improvement 1996-1999  
( School Level )**

	Model 1		Model 2		Model 3	
	4 year	2 year	4 year	2 year	4 year	2 year
<b>Mathematics</b>						
Intercept	-0.2194 (0.008)	2.1596 * (6.061)	-3.4485 * (46.693)	-0.3800 * (6.215)	1.1353 (0.260)	3.1290 * (14.193)
School math top quintile	0.9139 (2.471)	1.1645 * (17.209)	0.9860 (3.462)	1.1249 * (17.312)		
Middle/Jr. High school	0.4238 (0.456)	0.5624 * (4.907)	0.7515 (1.752)	0.7509 * (10.729)		
% White in school	-0.0263 (1.503)	-0.0224 * (8.277)			-0.0291 (1.877)	-0.0227 * (8.712)
Free/reduced price lunch	-0.0281 (1.344)	-0.0161 * (4.105)			-0.0470 (4.492)	-0.0299 * (17.500)
Chi-square statistics	8.933	45.115	7.105	35.718	5.625	20.483
Significance level	0.0628	0.0001	0.0287	0.0001	0.0601	0.0001
Concordant	71.5%	70.5%	57.5%	52.4%	65.8%	63.7%
Mean of dependent variable	0.0714	0.5543	0.5644	0.9688	0.5644	0.9688
Number of observations	238	359	225	353	225	353
<b>Reading</b>						
Intercept	-0.1460 (0.015)	5.1301 * (8.549)	-0.7420 * (11.646)	2.6949 * (68.015)	1.9258 (3.139)	6.1601 * (13.794)
School reading top quintile	0.8138 * (5.507)	10.9484 (0.005)	1.0311 * (9.765)	12.0049 (0.003)		
Middle/Jr. High school	1.2287 * (13.831)	1.1327 (1.045)	1.4751 * (24.521)	1.8697 (3.129)		
% White in school	0.0012 (0.013)	-0.0041 (0.086)			-0.0059 (0.341)	-0.0056 (0.172)
Free/reduced price lunch	-0.0181 (2.751)	-0.0451 * (7.921)			-0.0405 * (17.123)	-0.0553 * (13.575)
Chi-square statistics	45.830	22.065	41.026	12.270	25.898	17.111
Significance level	0.0001	0.0002	0.0001	0.0022	0.0001	0.0002
Concordant	74.5%	83.4%	61.2%	54.2%	69.5%	75.8%
Mean of dependent variable	0.5644	0.9688	0.5644	0.9688	0.5644	0.9688
Number of observations	225	353	225	353	225	353

model 1 : independent variables are school math/reading top quintile, % of own minority student in school, school free/reduced price lunch, dummy variable for high school

model 2 : independent variables are school math/reading top quintile, dummy variable for high school

model 3 : independent variables are % of own minority student in school, school free/reduced price lunch

4 year : 1996 score < 1997 score < 1998 score < 1999

2 year : 1996 score < 1999 score

\*significant at 95% significance level

chi-square statistics are in parentheses

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1996, 1997, 1998, and 1999.

**Table E-13 Maximum Likelihood Estimates of Test Score Improvement 1996-1999 : Stepwise ( School Level, Mathematics )**

	Overall		American Indian		Asian		Hispanic		African American		Caucasin	
	4 year	2 year	4 year	2 year	4 year	2 year	4 year	2 year	4 year	2 year	4 year	2 year
Intercept	-2.5829 *	-0.5756 *		-0.1361	-1.6487 *	0.1335	-3.2321 *	-0.4769 *	-3.6109 *	-0.4895 *	-3.6460 *	-0.5041 *
	(105.445)	(14.098)		(0.475)	(34.195)	(0.399)	(30.150)	(5.052)	(25.391)	(5.646)	(51.004)	(9.601)
School math top quintile		1.2902 *		1.1658 *				0.9624 *			1.4433 *	1.1753 *
		(23.363)		(4.378)				(6.345)			(6.655)	(18.649)
School math bottom quintile												
School reading top quintile						0.7828 *						
						(4.236)						
School reading bottom quintile												
% Indian in school												
% Asian in school											0.1157 *	0.0745 *
											(6.634)	(5.014)
% Hispanic in school												
% Black in school												
Charter school												
Middle / Jr. High school		0.7006 *										0.6485 *
		(9.549)										(7.645)
Rural area												
Urban area												
Free/reduced price lunch												
Chi-square statistics		41.938		4.882		4.420		6.541			10.785	41.380
Significance level		0.0001		0.0271		0.0355		0.0105			0.0046	0.0001
Concordant		53.2%		20.7%		31.6%		32.9%			70.4%	64.4%
Mean of dependent variable	0.0702	0.5123	0.0000	0.5082	0.1613	0.5971	0.0380	0.4559	0.0263	0.3800	0.0714	0.5543
Number of observations	242	365	64	122	93	139	79	136	76	100	238	359

4 year : 1996 score < 1997 score < 1998 score < 1999 score

2 year : 1996 score < 1999 score

chi-square statistics are in parentheses

\*significant at 95% significance level

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1996, 1997, 1998, and 1999.

**Table E-14 Maximum Likelihood Estimates of Test Score Improvement 1996-1999 : Stepwise ( School Level, Reading )**

	Overall		American Indian		Asian		Hispanic		African American		Caucasin	
	4 year	2 year	4 year	2 year	4 year	2 year	4 year	2 year	4 year	2 year	4 year	2 year
<b>Intercept</b>	-0.7223 *	3.4543 *	-4.0073 *	0.7585 *	-1.2090 *	0.5705	-4.0973 *	0.4336 *	-3.6843 *	0.2369	-0.1430	4.4128 *
	(10.748)	(127.233)	(15.772)	(14.498)	(22.512)	(2.704)	(20.848)	(3.993)	(23.422)	(0.434)	(0.202)	(76.987)
<b>School math top quintile</b>								0.9527 *				
								(4.463)				
<b>School math bottom quintile</b>							3.7766 *				-2.5248 *	
							(5.617)				(5.285)	
<b>School reading top quintile</b>	0.9440 *										0.9948 *	
	(8.273)										(8.536)	
<b>School reading bottom quintile</b>	-2.1645 *											-3.8738 *
	(3.949)											(31.320)
<b>% Indian in school</b>												
<b>% Asian in school</b>									0.2067 *	0.2138 *		
									(11.114)	(6.016)		
<b>% Hispanic in school</b>							0.2302 *					
							(5.816)					
<b>% Black in school</b>												
<b>Charter school</b>												
<b>Middle / Jr. High school</b>	1.4531 *					0.8545 *					1.1643 *	
	(23.773)					(3.932)					(12.202)	
<b>Rural area</b>											-0.7150 *	
											(4.512)	
<b>Urban area</b>												
<b>Free/reduced price lunch</b>												
<b>Chi-square statistics</b>	48.718					3.835	14.131	4.896	14.425	10.215	51.702	29.603
<b>Significance level</b>	0.0001					0.0502	0.0009	0.0269	0.0001	0.0014	0.0001	0.0001
<b>Concordant</b>	63.5%					31.5%	72.3%	30.3%	87.8%	67.0%	70.2%	61.4%
<b>Mean of dependent variable</b>	0.5415	0.9694	0.0179	0.6810	0.2299	0.7012	0.0811	0.6667	0.1286	0.7447	0.5644	0.9688
<b>Number of observations</b>	229	359	56	116	87	134	74	129	70	94	225	353

4 year : 1996 score < 1997 score < 1998 score < 1999 score

2 year : 1996 score < 1999 score

chi-square statistics are in parentheses

\*significant at 95% significance level

Source : Regression Analysis, Minnesota Basic Standards Test Scores, Spring 1996, 1997, 1998, and 1999.

**Table E-15 : Effect of School Reading Improvement on Mathematics Score Improvement**

	Odd Ratio of 2-Year Mathematics Improvement					
	Overall	American Indian	Asian	Hispanic	African American	Caucasian
<b>2000 data</b>						
<b>2000 score &gt; 1998 score</b>						
1) Probability of 2-Year Improvement in Reading	13.806 (0.0001)	9.732 (0.0001)	17.616 (0.0001)	12.343 (0.0001)	7.581 (0.0001)	12.072 (0.0001)
<b>1999 data</b>						
<b>1999 score &gt; 1996 score</b>						
1) Probability of 2-Year Improvement in Reading	— — * (0.9798)	13.392 (0.0001)	10.908 (0.0001)	42.963 0.0001	9.382 (0.0039)	— — * (0.9797)
2) Probability of 2-Year Improvement in Reading : Controlling for Race and Poverty Variables	— — * (0.9795)	18.040 (0.0001)	12.228 (0.0001)	45.687 (0.0001)	11.394 (0.0029)	— — * (0.9785)

p-values are in parentheses

source : Regression analyses, Minnesota Basic Standards Test Scores, Spring 1996, 1998, 1999 and 2000

\* not significant

race and poverty are 1999 school values.

**Table E-16 : Effect of School Mathematics Improvement on Reading Score Improvement**

	Odd Ratio of 2-Year Reading Improvement					
	Overall	American Indian	Asian	Hispanic	African American	Caucasian
<b>2000 data</b>						
<b>2000 score &gt; 1998 score</b>						
<b>1) Probability of 2-Year Improvement in Mathematics</b>	13.806 (0.0001)	9.732 (0.0001)	17.616 (0.0001)	12.343 (0.0001)	7.581 (0.0001)	12.072 (0.0001)
<b>1999 data</b>						
<b>1999 score &gt; 1996 score</b>						
<b>1) Probability of 2-Year Improvement in Mathematics</b>	— — * (0.9411)	13.392 (0.0001)	10.908 (0.0001)	42.963 (0.0001)	9.382 (0.0001)	— — * (0.9382)
<b>2) Probability of 2-Year Improvement in Mathematics : Controlling for Race and Poverty Variables</b>	— — * (0.9488)	17.664 (0.0001)	11.975 (0.0001)	49.603 (0.0001)	12.828 (0.0022)	— — * (0.9311)

p-values are in parentheses

source : Regression analyses, Minnesota Basic Standards Test Scores, Spring 1998, 1999 and 2000

\* not significant

race and poverty are 1999 school values.

**Table E-17 :Effect of Two-Year School Improvement (1999>1998)  
on Individual Test Score**

	<b>Math Percent Correct</b>	<b>Reading Percent Correct</b>
<b>Math Improvement</b>		
<b>American Indian</b>	0.4585 (0.415)	0.8087 (0.736)
<b>Asian</b>	0.7176 (1.132)	1.0637 (1.754)
<b>Hispanic</b>	0.4703 (0.470)	0.8679 (0.866)
<b>African American</b>	0.3073 (0.427)	0.3489 (0.480)
<b>Caucasian</b>	0.9853 * (8.578)	0.7367 * (6.694)
<b>Reading Improvement</b>		
<b>American Indian</b>	1.1304 (0.891)	1.5679 (1.231)
<b>Asian</b>	0.1803 (0.239)	0.1854 (0.257)
<b>Hispanic</b>	2.0541 (1.831)	3.0129 * (2.693)
<b>African American</b>	-0.5657 (-0.700)	-0.2000 (-0.244)
<b>Caucasian</b>	0.5708 * (3.794)	0.8754 * (6.077)
<b>Math &amp; Reading Improvement</b>		
<b>American Indian</b>	0.1050 (0.095)	0.8078 (0.733)
<b>Asian</b>	0.6147 (0.970)	1.0246 (1.691)
<b>Hispanic</b>	0.2494 (0.343)	0.9277 (0.921)
<b>African American</b>	0.3785 (0.376)	0.3833 (0.522)
<b>Caucasian</b>	0.9619 * (8.372)	0.8488 * (7.711)

source : Minnesota Basic Standards Test Scores Spring, 1998 and 1999

t-statistics are in parentheses.

\* significant at 95% significance level