

Appendix A

AAPL Results Summary
State Proficiency Standards

Percent of Students Meeting State Benchmarks for Language Acquisition

October 2016 - AAPL Test

District	4th Grade	5th Grade	6th Grade	4-6 Combined
Chinese				
Washington	98%	99%		99%
Canyons	99%	99%	86%	95%
Davis	97%	98%	82%	94%
Alpine	99%	94%	80%	94%
Jordan	98%	97%	83%	92%
Granite	97%	98%	78%	91%
Weber	95%	93%	62%	88%
French				
Davis	100%	100%	95%	98%
Canyons	98%	98%	83%	93%
Granite	99%	93%	82%	92%
Jordan	92%	73%	47%	71%
Spanish				
Canyons	98%	96%	93%	96%
Davis	100%	97%	89%	95%
Alpine	96%	94%	87%	93%
Washington	99%	90%	75%	92%
Granite	98%	92%	81%	92%
Jordan	92%	91%	67%	88%
Weber	93%	83%	63%	83%
All Combined	97%	95%	82%	93%



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AAPPL Performance Categories Grades 4-8
2016

FRENCH, GERMAN, PORTUGUESE & SPANISH

<i>Grade</i>	INTERPERSONAL SPEAKING	INTERPRETIVE READING /LISTENING	PRESENTATIONAL WRITING
4	N3-N4		
5	N4-I1		
6	I1-I2		
7	I2-I3		
8	I3-I4		

CHINESE

<i>Grade</i>	INTERPERSONAL SPEAKING	INTERPRETIVE READING /LISTENING	PRESENTATIONAL WRITING
4	N2-N3		
5	N3-N4		
6	N4-I1		
7	I1-I2		
8	I2-I3		

Appendix B

Immersion Student Regression Summary (Proficiency)
Immersion Student Regression Outputs (Proficiency)

Immersion Student Results: Proficiency

Statistical modeling (binary logistic regression) was used to control for the inherent differences in proficiency attributable to the following variables: gender, minority, low income, English language learner status, special education status, mobility (full academic year), title I status, prior proficiency level, and teacher effect (classwide student growth). Since immersion classes are inherently different from non-immersion classes, we can't simply compare proficiency of immersion classes with proficiency of non-immersion classes. If we do, we will falsely conclude how immersion programs contribute to student proficiency. With statistical controls in place, we gain a better understanding of the true immersion effect. The tables below summarize the results of the binary logistic regression analyses for each predictor. In order to not overstate results, the "closest to one" number within a 95% confidence interval of the regression coefficient will be used in the interpretation. The models include test data for all Davis district students during the past three years.

Variable	Exponentiated Regression Coefficient (B)			Change in Probability	Interpretation
	95% CI (low)	95% CI (high)	Closest to One		
Early Literacy (DIBELS: Grades 1-3)					
Gender	0.885	1.027	1.000	0%	Gender has no effect on likelihood of proficiency.
Minority	0.780	0.970	0.970	-1%	Minority students are 1% less likely to be proficient.
Low Income	0.690	0.825	0.825	-5%	Low income students are 5% less likely to be proficient.
English Language Learner	0.430	0.667	0.667	-10%	ELL students are 10% less likely to be proficient.
Special Education	0.300	0.373	0.373	-23%	Special Education students are 23% less likely to be proficient.
Full Academic Year	1.156	1.753	1.156	4%	Students who stay enrolled the whole year are 4% more likely to be proficient.
Title I	0.678	0.818	0.818	-5%	Students enrolled in title I schools are 5% less likely to be proficient.
Prior Proficiency Level	5.763	6.359	5.763	35%	Each 1 point increase in prior year proficiency score results in a 35% increase in likelihood of proficiency.
Teacher Effect	1.024	1.030	1.024	1%	Each 1 percentile increase in teacher effect results in a 1% increase in likelihood of proficiency.
Immersion Student	0.920	1.179	1.000	0%	Immersion enrollment has no effect on likelihood of proficiency.
English Language Arts (CRT: 2nd Grade)					
Gender	0.779	1.012	1.000	0%	Gender has no effect on likelihood of proficiency.
Minority	0.711	1.038	1.000	0%	Minority status has no effect on likelihood of proficiency.
Low Income	0.680	0.928	0.928	-2%	Low income students are 2% less likely to be proficient.
English Language Learner	0.236	0.524	0.524	-16%	ELL students are 16% less likely to be proficient.
Special Education	0.238	0.346	0.346	-24%	Special Education students are 24% less likely to be proficient.
Full Academic Year	1.058	2.096	1.058	1%	Students who stay enrolled the whole year are 1% more likely to be proficient.
Title I	0.730	1.011	1.000	0%	Title I school enrollment has no effect on likelihood of proficiency.
Prior Proficiency Level	5.051	5.991	5.051	33%	Each 1 point increase in prior year proficiency score results in a 33% increase in likelihood of proficiency.
Teacher Effect	1.066	1.080	1.066	2%	Each 1 percentile increase in teacher effect results in a 2% increase in likelihood of proficiency.
Immersion Student	0.801	1.232	1.000	0%	Immersion enrollment has no effect on likelihood of proficiency.
Math (CRT: 2nd Grade)					
Gender	1.094	1.406	1.094	2%	Males are 2% more likely to be proficient.
Minority	0.529	0.756	0.756	-7%	Minority students are 7% less likely to be proficient.
Low Income	0.592	0.796	0.796	-6%	Low income students are 6% less likely to be proficient.
English Language Learner	0.402	0.825	0.825	-5%	ELL students are 5% less likely to be proficient.
Special Education	0.274	0.395	0.395	-22%	Special Education students are 22% less likely to be proficient.
Full Academic Year	0.898	1.765	1.000	0%	Full year enrollment has no effect on likelihood of proficiency.
Title I	0.886	1.219	1.000	0%	Title I school enrollment has no effect on likelihood of proficiency.
Prior Proficiency Level	3.716	4.262	3.716	29%	Each 1 point increase in prior year proficiency score results in a 29% increase in likelihood of proficiency.
Teacher Effect	1.071	1.084	1.071	2%	Each 1 percentile increase in teacher effect results in a 2% increase in likelihood of proficiency.
Immersion Student	0.692	1.030	1.000	0%	Immersion enrollment has no effect on likelihood of proficiency.
English Language Arts (SAGE: 4th-6th Grades)					
Gender	0.767	0.879	0.879	-3%	Males are 3% less likely to be proficient.
Minority	0.820	1.012	1.000	0%	Minority status has no effect on likelihood of proficiency.
Low Income	0.640	0.769	0.769	-7%	Low income students are 7% less likely to be proficient.
English Language Learner	0.484	0.812	0.812	-5%	ELL students are 5% less likely to be proficient.
Special Education	0.409	0.523	0.523	-16%	Special Education students are 16% less likely to be proficient.
Full Academic Year	1.009	1.695	1.009	0%	Full year enrollment has no effect on likelihood of proficiency.
Title I	0.913	1.104	1.000	0%	Title I school enrollment has no effect on likelihood of proficiency.
Prior Proficiency Level	7.128	7.847	7.128	38%	Each 1 point increase in prior year proficiency score results in a 38% increase in likelihood of proficiency.
Teacher Effect	1.060	1.066	1.060	1%	Each 1 percentile increase in teacher effect results in a 1% increase in likelihood of proficiency.
Immersion Student	0.887	1.164	1.000	0%	Immersion enrollment has no effect on likelihood of proficiency.
Math (SAGE: 4th-6th Grades)					
Gender	0.931	1.079	1.000	0%	Gender has no effect on likelihood of proficiency.
Minority	0.803	1.013	1.000	0%	Minority status has no effect on likelihood of proficiency.
Low Income	0.658	0.802	0.802	-5%	Low income students are 5% less likely to be proficient.
English Language Learner	0.430	0.758	0.758	-7%	ELL students are 7% less likely to be proficient.
Special Education	0.514	0.669	0.669	-10%	Special Education students are 10% less likely to be proficient.
Full Academic Year	1.138	1.995	1.138	3%	Students who stay enrolled the whole year are 3% more likely to be proficient.
Title I	1.004	1.233	1.004	0%	Title I school enrollment has no effect on likelihood of proficiency.
Prior Proficiency Level	8.698	9.633	8.698	40%	Each 1 point increase in prior year proficiency score results in a 40% increase in likelihood of proficiency.
Teacher Effect	1.063	1.068	1.063	2%	Each 1 percentile increase in teacher effect results in a 2% increase in likelihood of proficiency.
Immersion Student	0.965	1.294	1.000	0%	Immersion enrollment has no effect on likelihood of proficiency.
Science (SAGE: 5th-6th Grades)					
Gender	1.207	1.419	1.207	5%	Males are 5% more likely to be proficient.
Minority	0.647	0.825	0.825	-5%	Minority students are 5% less likely to be proficient.
Low Income	0.658	0.814	0.814	-5%	Low income students are 5% less likely to be proficient.
English Language Learner	0.395	0.764	0.764	-7%	ELL students are 7% less likely to be proficient.
Special Education	0.363	0.477	0.477	-18%	Special Education students are 18% less likely to be proficient.
Full Academic Year	0.990	1.823	1.000	0%	Full year enrollment has no effect on likelihood of proficiency.
Title I	0.851	1.063	1.000	0%	Title I school enrollment has no effect on likelihood of proficiency.
Prior Proficiency Level	5.131	5.681	5.131	34%	Each 1 point increase in prior year proficiency score results in a 34% increase in likelihood of proficiency.
Teacher Effect	1.065	1.073	1.065	2%	Each 1 percentile increase in teacher effect results in a 2% increase in likelihood of proficiency.
Immersion Student	0.783	1.150	1.000	0%	Immersion enrollment has no effect on likelihood of proficiency.

The following pages include the SPSS regression outputs.

Logistic Regression (DIBELS)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	18795.887 ^a	.328	.491

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted			
		Proficient		Percentage Correct	
		0	1		
Step 1	Proficient	0	3669	2736	57.3
		1	1043	19164	94.8
	Overall Percentage				85.8

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a								
GenderM	-.048	.038	1.590	1	.207	.953	.885	1.027
Minority	-.139	.056	6.277	1	.012	.870	.780	.970
LowIncome	-.282	.046	38.294	1	.000	.754	.690	.825
ELL	-.624	.112	31.162	1	.000	.536	.430	.667
SpEd	-1.095	.056	388.217	1	.000	.335	.300	.373
FAY	.353	.106	11.067	1	.001	1.424	1.156	1.753
TitleI	-.294	.048	37.769	1	.000	.745	.678	.818
PriorProfScore	1.801	.025	5142.557	1	.000	6.054	5.763	6.359
TeacherEffectBPRSGP	.026	.002	276.509	1	.000	1.027	1.024	1.030
ImmersionStudent	.041	.063	.420	1	.517	1.042	.920	1.179
Constant	-4.356	.147	873.430	1	.000	.013		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionStudent.

Logistic Regression (LA CRT)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	6032.959 ^a	.371	.554

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		
		Proficient		Percentage Correct
		0	1	
Step 1	Proficient	0	1	
		1336	932	58.9
		345	6769	95.2
	Overall Percentage			86.4

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a								
GenderM	-.119	.067	3.163	1	.075	.888	.779	1.012
Minority	-.152	.096	2.481	1	.115	.859	.711	1.038
LowIncome	-.230	.079	8.476	1	.004	.794	.680	.928
ELL	-1.045	.203	26.497	1	.000	.352	.236	.524
SpEd	-1.247	.095	172.383	1	.000	.287	.238	.346
FAY	.398	.174	5.223	1	.022	1.490	1.058	2.096
TitleI	-.152	.083	3.349	1	.067	.859	.730	1.011
PriorProfScore	1.705	.044	1533.985	1	.000	5.501	5.051	5.991
TeacherEffectBPRSGP	.070	.003	458.830	1	.000	1.073	1.066	1.080
ImmersionStudent	-.007	.110	.004	1	.951	.993	.801	1.232
Constant	-7.342	.289	643.272	1	.000	.001		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionStudent.

Logistic Regression (MA CRT)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	6513.319 ^a	.339	.505

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted			
		Proficient		Percentage Correct	
		0	1		
Step 1	Proficient	0	1277	1004	56.0
		1	393	6638	94.4
	Overall Percentage				85.0

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a								
GenderM	.215	.064	11.263	1	.001	1.240	1.094	1.406
Minority	-.458	.091	25.352	1	.000	.633	.529	.756
LowIncome	-.376	.076	24.697	1	.000	.687	.592	.796
ELL	-.551	.183	9.053	1	.003	.576	.402	.825
SpEd	-1.112	.093	143.402	1	.000	.329	.274	.395
FAY	.230	.172	1.787	1	.181	1.259	.898	1.765
TitleI	.038	.081	.220	1	.639	1.039	.886	1.219
PriorProfScore	1.381	.035	1558.424	1	.000	3.980	3.716	4.262
TeacherEffectBPRSGP	.075	.003	603.557	1	.000	1.077	1.071	1.084
ImmersionStudent	-.169	.102	2.775	1	.096	.844	.692	1.030
Constant	-6.311	.261	586.095	1	.000	.002		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionStudent.

Logistic Regression (LA SAGE)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	21193.664 ^a	.464	.620

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		
		Proficient		Percentage Correct
		0	1	
Step 1	Proficient	0	1	
		10226	2679	79.2
		2188	12909	85.5
	Overall Percentage			82.6

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a								
GenderM	-.197	.035	32.389	1	.000	.821	.767	.879
Minority	-.093	.054	3.002	1	.083	.911	.820	1.012
LowIncome	-.354	.047	57.971	1	.000	.702	.640	.769
ELL	-.467	.132	12.519	1	.000	.627	.484	.812
SpEd	-.771	.063	149.935	1	.000	.463	.409	.523
FAY	.268	.132	4.111	1	.043	1.308	1.009	1.695
TitleI	.004	.048	.007	1	.932	1.004	.913	1.104
PriorProfScore	2.012	.025	6741.587	1	.000	7.479	7.128	7.847
TeacherEffectBPRSGP	.061	.002	1574.969	1	.000	1.063	1.060	1.066
ImmersionStudent	.016	.069	.054	1	.816	1.016	.887	1.164
Constant	-7.860	.175	2005.883	1	.000	.000		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionStudent.

Logistic Regression (MA SAGE)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	18426.937 ^a	.516	.688

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		
		Proficient		Percentage Correct
		0	1	
Step 1	Proficient	0	1	
		11462	2168	84.1
		1946	12302	86.3
	Overall Percentage			85.2

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a								
GenderM	.002	.038	.004	1	.952	1.002	.931	1.079
Minority	-.103	.059	3.015	1	.083	.902	.803	1.013
LowIncome	-.320	.051	39.795	1	.000	.726	.658	.802
ELL	-.561	.145	15.015	1	.000	.571	.430	.758
SpEd	-.534	.067	63.365	1	.000	.586	.514	.669
FAY	.410	.143	8.183	1	.004	1.507	1.138	1.995
TitleI	.107	.052	4.143	1	.042	1.113	1.004	1.233
PriorProfScore	2.214	.026	7233.687	1	.000	9.154	8.698	9.633
TeacherEffectBPRSGP	.063	.001	1975.987	1	.000	1.065	1.063	1.068
ImmersionStudent	.111	.075	2.204	1	.138	1.117	.965	1.294
Constant	-8.894	.186	2293.979	1	.000	.000		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionStudent.

Logistic Regression (SC SAGE)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	14859.556 ^a	.430	.578

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted			
		Proficient		Percentage Correct	
		0	1		
Step 1	Proficient	0	5984	1872	76.2
		1	1555	9174	85.5
	Overall Percentage				81.6

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	GenderM	.269	.041	42.283	1	.000	1.309	1.207	1.419
	Minority	-.314	.062	25.551	1	.000	.730	.647	.825
	LowIncome	-.312	.054	33.158	1	.000	.732	.658	.814
	ELL	-.599	.168	12.684	1	.000	.549	.395	.764
	SpEd	-.876	.070	157.743	1	.000	.416	.363	.477
	FAY	.295	.156	3.583	1	.058	1.343	.990	1.823
	TitleI	-.050	.057	.783	1	.376	.951	.851	1.063
	PriorProfScore	1.686	.026	4213.987	1	.000	5.399	5.131	5.681
	TeacherEffectBPRSGP	.066	.002	1313.812	1	.000	1.069	1.065	1.073
	ImmersionStudent	-.052	.098	.282	1	.595	.949	.783	1.150
	Constant	-7.425	.204	1324.142	1	.000	.001		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionStudent.

Appendix C

Immersion Student Regression Summary (Growth)
Immersion Student Regression Outputs (Growth)

Immersion Student Results: Growth

Statistical modeling (linear regression) was used to control for the inherent differences in academic growth attributable to the following variables: gender, minority, low income, English language learner status, special education status, mobility (full academic year), title I status, prior-year proficiency level, and teacher effect (classwide student growth). Since immersion classes are inherently different from non-immersion classes, we can't simply compare growth of immersion classes with growth of non-immersion classes. If we do, we will falsely conclude how immersion programs contribute to student growth. With statistical controls in place, we gain a better understanding of the true immersion effect. The tables below summarize the results of the linear regression analyses for each predictor. In order to not overstate results, the "closest to zero" number within a 95% confidence interval of the regression coefficient will be used in the interpretation. The models include test data for all Davis district students during the past

Variable	Regression Coefficient (B)			Interpretation
	95% CI (low)	95% CI (high)	Closest to Zero	
English Language Arts (SAGE: 4th-6th Grades)				
Gender	-3.656	-2.413	-2	Predicted academic growth for males is reduced by 2 percentile points.
Minority	-1.778	0.155	0	Minority status has no effect on predicted academic growth.
Low Income	-3.906	-2.240	-2	Predicted academic growth for low income students is reduced by 2 percentile points.
English Language Learner	-3.912	0.024	0	ELL status has no effect on predicted academic growth.
Special Education	-9.675	-7.732	-8	Predicted academic growth for special education students is reduced by 8 percentile points.
Full Academic Year	-1.384	4.909	0	Full year enrollment has no effect on predicted academic growth.
Title I	-0.043	1.667	0	Title I school enrollment has no effect on predicted academic growth.
Prior Proficiency Level	-2.168	-1.517	-2	Each 1 point increase in prior year proficiency score results in a 2 percentile point decrease in predicted academic growth.
Teacher Effect	0.966	1.016	1	Each 1 point increase in teacher effect results in a 1 percentile point increase in predicted academic growth.
Immersion Student	-1.678	0.849	0	Immersion enrollment has no effect on predicted academic growth.
Math (SAGE: 4th-6th Grades)				
Gender	-0.169	1.004	0	Gender has no effect on predicted academic growth.
Minority	-1.044	0.784	0	Minority status has no effect on predicted academic growth.
Low Income	-3.525	-1.958	-2	Predicted academic growth for low income students is reduced by 2 percentile points.
English Language Learner	-4.322	-0.643	-1	Predicted academic growth for ELL Students is reduced by 1 percentile point.
Special Education	-7.721	-5.912	-6	Predicted academic growth for special education students is reduced by 6 percentile points.
Full Academic Year	2.483	8.393	2	Predicted academic growth for students who stay enrolled the whole year is increased by 2 percentile points.
Title I	0.142	1.743	0	Title I school enrollment has no effect on predicted academic growth.
Prior Proficiency Level	-1.504	-0.945	-1	Each 1 point increase in prior year proficiency score results in a 1 percentile point decrease in predicted academic growth.
Teacher Effect	0.981	1.020	1	Each 1 point increase in teacher effect results in a 1 percentile point increase in predicted academic growth.
Immersion Student	-1.495	0.920	0	Immersion enrollment has no effect on predicted academic growth.
Science (SAGE: 5th-6th Grades)				
Gender	2.673	4.162	3	Predicted academic growth for males is increased by 3 percentile points.
Minority	-4.477	-2.180	-2	Predicted academic growth for minority students is decreased by 2 percentile points.
Low Income	-3.054	-1.056	-1	Predicted academic growth for low income students is reduced by 1 percentile points.
English Language Learner	-4.996	-0.061	0	ELL status has no effect on predicted academic growth.
Special Education	-8.574	-6.215	-6	Predicted academic growth for special education students is reduced by 6 percentile points.
Full Academic Year	-0.538	7.071	0	Full year enrollment has no effect on predicted academic growth.
Title I	-0.202	1.851	0	Title I school enrollment has no effect on predicted academic growth.
Prior Proficiency Level	-2.261	-1.517	-2	Each 1 point increase in prior year proficiency score results in a 2 percentile point decrease in predicted academic growth.
Teacher Effect	0.968	1.027	1	Each 1 point increase in prior year proficiency score results in a 1 percentile point decrease in predicted academic growth.
Immersion Student	-1.879	1.593	0	Immersion enrollment has no effect on predicted academic growth.

The following pages include the SPSS regression outputs.

Regression (LA SAGE)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.439 ^a	.193	.192	26.152

a. Predictors: (Constant), Immersion Student, Teacher Growth, Gender, Full Academic Year, English Language Learner, Special Education, Title I, Low Income, Prior Proficiency Score, Minority

Coefficients^a

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	6.708	1.799
	Gender	-3.035	.317
	Minority	-.812	.493
	Low Income	-3.073	.425
	English Language Learner	-1.944	1.004
	Special Education	-8.703	.496
	Full Academic Year	1.763	1.605
	Title I	.812	.436
	Prior Proficiency Score	-1.843	.166
	Teacher Growth	.991	.013
	Immersion Student	-.415	.645

Coefficients^a

Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		Beta			Lower Bound	Upper Bound
1	(Constant)		3.729	.000	3.182	10.234
	Gender	-.052	-9.575	.000	-3.656	-2.413
	Minority	-.010	-1.645	.100	-1.778	.155
	Low Income	-.043	-7.228	.000	-3.906	-2.240
	English Language Learner	-.012	-1.936	.053	-3.912	.024
	Special Education	-.101	-17.560	.000	-9.675	-7.732
	Full Academic Year	.006	1.098	.272	-1.384	4.909
	Title I	.011	1.862	.063	-.043	1.667
	Prior Proficiency Score	-.067	-11.082	.000	-2.168	-1.517
	Teacher Growth	.418	77.265	.000	.966	1.016
	Immersion Student	-.004	-.643	.520	-1.678	.849

a. Dependent Variable: Student Growth Percentile

Regression (MA SAGE)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.528 ^a	.278	.278	24.654

a. Predictors: (Constant), Immersion Student, Teacher Growth, Full Academic Year, Gender, English Language Learner, Special Education, Title I, Prior Proficiency Score, Low Income, Minority

Coefficients^a

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	-1.091	1.639
	Gender	.417	.299
	Minority	-.130	.466
	Low Income	-2.741	.400
	English Language Learner	-2.482	.939
	Special Education	-6.817	.462
	Full Academic Year	5.438	1.508
	Title I	.943	.408
	Prior Proficiency Score	-1.224	.142
	Teacher Growth	1.001	.010
	Immersion Student	-.287	.616

Coefficients^a

Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		Beta			Lower Bound	Upper Bound
1	(Constant)		-.666	.506	-4.302	2.121
	Gender	.007	1.394	.163	-.169	1.004
	Minority	-.002	-.279	.780	-1.044	.784
	Low Income	-.039	-6.855	.000	-3.525	-1.958
	English Language Learner	-.015	-2.645	.008	-4.322	-.643
	Special Education	-.080	-14.771	.000	-7.721	-5.912
	Full Academic Year	.019	3.607	.000	2.483	8.393
	Title I	.013	2.308	.021	.142	1.743
	Prior Proficiency Score	-.048	-8.593	.000	-1.504	-.945
	Teacher Growth	.518	101.044	.000	.981	1.020
	Immersion Student	-.002	-.467	.641	-1.495	.920

a. Dependent Variable: Student Growth Percentile

Regression (SC SAGE)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.457 ^a	.209	.208	25.595

a. Predictors: (Constant), Immersion Student, Gender, Full Academic Year, Teacher Growth, English Language Learner, Special Education, Title I, Prior Proficiency Score, Low Income, Minority

Coefficients^a

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	1.856	2.160
	Gender	3.417	.380
	Minority	-3.328	.586
	Low Income	-2.055	.510
	English Language Learner	-2.528	1.259
	Special Education	-7.395	.602
	Full Academic Year	3.266	1.941
	Title I	.824	.524
	Prior Proficiency Score	-1.889	.190
	Teacher Growth	.998	.015
	Immersion Student	-.143	.886

Coefficients^a

Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		Beta			Lower Bound	Upper Bound
1	(Constant)		.859	.390	-2.377	6.088
	Gender	.059	8.995	.000	2.673	4.162
	Minority	-.042	-5.681	.000	-4.477	-2.180
	Low Income	-.029	-4.031	.000	-3.054	-1.056
	English Language Learner	-.014	-2.009	.045	-4.996	-.061
	Special Education	-.086	-12.289	.000	-8.574	-6.215
	Full Academic Year	.011	1.683	.092	-.538	7.071
	Title I	.011	1.575	.115	-.202	1.851
	Prior Proficiency Score	-.072	-9.956	.000	-2.261	-1.517
	Teacher Growth	.438	66.319	.000	.968	1.027
	Immersion Student	-.001	-.161	.872	-1.879	1.593

a. Dependent Variable: Student Growth Percentile

Appendix D

Non-Immersion Student Regression Summary (Proficiency)
Non-Immersion Student Regression Outputs (Proficiency)

Non-Immersion Student Results: Proficiency

Statistical modeling (binary logistic regression) was used to control for the inherent differences in proficiency attributable to the following variables: gender, minority, low income, English language learner status, special education status, mobility (full academic year), title I status, prior proficiency level, and teacher effect (classwide student growth). Since immersion classes are inherently different from non-immersion classes, we can't simply compare proficiency of immersion classes with proficiency of non-immersion classes. If we do, we will falsely conclude how immersion programs contribute to student proficiency. With statistical controls in place, we gain a better understanding of the true immersion effect. The tables below summarize the results of the binary logistic regression analyses for each predictor. In order to not overstate results, the "closest to one" number within a 95% confidence interval of the regression coefficient will be used in the interpretation. The models include test data for all non-immersion Davis district students during the past three years. This will help to determine whether having an immersion program in the school affects proficiency of non-immersion students.

Variable	Exponentiated Regression Coefficient (B)			Change in Probability	Interpretation
	95% CI (low)	95% CI (high)	Closest to One		
Early Literacy (DIBELS: Grades 1-3)					
Gender	0.887	1.038	1.000	0%	Gender has no effect on likelihood of proficiency.
Minority	0.774	0.972	0.972	-1%	Minority students are 1% less likely to be proficient.
Low Income	0.695	0.837	0.837	-4%	Low income students are 4% less likely to be proficient.
English Language Learner	0.424	0.667	0.667	-10%	ELL students are 10% less likely to be proficient.
Special Education	0.298	0.373	0.373	-23%	Special Education students are 23% less likely to be proficient.
Full Academic Year	1.162	1.774	1.162	4%	Students who stay enrolled the whole year are 4% more likely to be proficient.
Title I	0.662	0.803	0.803	-5%	Students enrolled in title I schools are 5% less likely to be proficient.
Prior Proficiency Level	5.749	6.377	5.749	35%	Each 1 point increase in prior year proficiency score results in a 35% increase in likelihood of proficiency.
Teacher Effect	1.024	1.031	1.024	1%	Each 1 percentile increase in teacher effect results in a 1% increase in likelihood of proficiency.
Immersion Student	0.777	0.978	0.978	-1%	Non-immersion students in immersion schools are 1% less likely to be proficient.
English Language Arts (CRT: 2nd Grade)					
Gender	0.785	1.035	1.000	0%	Gender has no effect on likelihood of proficiency.
Minority	0.733	1.090	1.000	0%	Minority status has no effect on likelihood of proficiency.
Low Income	0.669	0.922	0.922	-2%	Low income students are 2% less likely to be proficient.
English Language Learner	0.224	0.512	0.512	-16%	ELL students are 16% less likely to be proficient.
Special Education	0.236	0.346	0.346	-24%	Special Education students are 24% less likely to be proficient.
Full Academic Year	1.043	2.096	1.043	1%	Students who stay enrolled the whole year are 1% more likely to be proficient.
Title I	0.732	1.026	1.000	0%	Title I school enrollment has no effect on likelihood of proficiency.
Prior Proficiency Level	5.001	5.978	5.001	33%	Each 1 point increase in prior year proficiency score results in a 33% increase in likelihood of proficiency.
Teacher Effect	1.067	1.082	1.067	2%	Each 1 percentile increase in teacher effect results in a 2% increase in likelihood of proficiency.
Immersion Student	0.842	1.256	1.000	0%	A school immersion program has no effect on the likelihood of proficiency of non-immersion students.
Math (CRT: 2nd Grade)					
Gender	1.054	1.378	1.054	1%	Males are 1% more likely to be proficient.
Minority	0.526	0.766	0.766	-7%	Minority students are 7% less likely to be proficient.
Low Income	0.593	0.807	0.807	-5%	Low income students are 5% less likely to be proficient.
English Language Learner	0.432	0.912	0.912	-2%	ELL students are 2% less likely to be proficient.
Special Education	0.272	0.396	0.396	-22%	Special Education students are 22% less likely to be proficient.
Full Academic Year	0.953	1.895	1.000	0%	Full year enrollment has no effect on likelihood of proficiency.
Title I	0.905	1.261	1.000	0%	Title I school enrollment has no effect on likelihood of proficiency.
Prior Proficiency Level	3.760	4.350	3.760	29%	Each 1 point increase in prior year proficiency score results in a 29% increase in likelihood of proficiency.
Teacher Effect	1.075	1.089	1.075	2%	Each 1 percentile increase in teacher effect results in a 2% increase in likelihood of proficiency.
Immersion Student	0.914	1.342	1.000	0%	A school immersion program has no effect on the likelihood of proficiency of non-immersion students.
English Language Arts (SAGE: 4th-6th Grades)					
Gender	0.764	0.879	0.879	-3%	Males are 3% less likely to be proficient.
Minority	0.819	1.017	1.000	0%	Minority status has no effect on likelihood of proficiency.
Low Income	0.636	0.766	0.766	-7%	Low income students are 7% less likely to be proficient.
English Language Learner	0.482	0.813	0.813	-5%	ELL students are 5% less likely to be proficient.
Special Education	0.408	0.527	0.527	-15%	Special Education students are 15% less likely to be proficient.
Full Academic Year	0.992	1.674	1.000	0%	Full year enrollment has no effect on likelihood of proficiency.
Title I	0.914	1.107	1.000	0%	Title I school enrollment has no effect on likelihood of proficiency.
Prior Proficiency Level	7.158	7.906	7.158	38%	Each 1 point increase in prior year proficiency score results in a 38% increase in likelihood of proficiency.
Teacher Effect	1.060	1.067	1.060	1%	Each 1 percentile increase in teacher effect results in a 1% increase in likelihood of proficiency.
Immersion Student	0.888	1.117	1.000	0%	A school immersion program has no effect on the likelihood of proficiency of non-immersion students.
Math (SAGE: 4th-6th Grades)					
Gender	0.929	1.082	1.000	0%	Gender has no effect on likelihood of proficiency.
Minority	0.784	0.996	0.996	0%	Minority status has no effect on likelihood of proficiency.
Low Income	0.651	0.797	0.797	-6%	Low income students are 6% less likely to be proficient.
English Language Learner	0.427	0.758	0.758	-7%	ELL students are 7% less likely to be proficient.
Special Education	0.501	0.656	0.656	-10%	Special Education students are 10% less likely to be proficient.
Full Academic Year	1.120	1.968	1.120	3%	Students who stay enrolled the whole year are 3% more likely to be proficient.
Title I	1.014	1.249	1.014	0%	Title I school enrollment has no effect on likelihood of proficiency.
Prior Proficiency Level	8.612	9.567	8.612	40%	Each 1 point increase in prior year proficiency score results in a 40% increase in likelihood of proficiency.
Teacher Effect	1.063	1.069	1.063	2%	Each 1 percentile increase in teacher effect results in a 2% increase in likelihood of proficiency.
Immersion Student	0.934	1.203	1.000	0%	A school immersion program has no effect on the likelihood of proficiency of non-immersion students.
Science (SAGE: 5th-6th Grades)					
Gender	1.208	1.427	1.208	5%	Males are 5% more likely to be proficient.
Minority	0.649	0.832	0.832	-5%	Minority students are 5% less likely to be proficient.
Low Income	0.656	0.814	0.814	-5%	Low income students are 5% less likely to be proficient.
English Language Learner	0.387	0.753	0.753	-7%	ELL students are 7% less likely to be proficient.
Special Education	0.359	0.474	0.474	-18%	Special Education students are 18% less likely to be proficient.
Full Academic Year	0.983	1.815	1.000	0%	Full year enrollment has no effect on likelihood of proficiency.
Title I	0.853	1.068	1.000	0%	Title I school enrollment has no effect on likelihood of proficiency.
Prior Proficiency Level	5.148	5.717	5.148	34%	Each 1 point increase in prior year proficiency score results in a 34% increase in likelihood of proficiency.
Teacher Effect	1.065	1.073	1.065	2%	Each 1 percentile increase in teacher effect results in a 2% increase in likelihood of proficiency.
Immersion Student	0.886	1.182	1.000	0%	A school immersion program has no effect on the likelihood of proficiency of non-immersion students.

The following pages include the SPSS regression outputs.

Logistic Regression (DIBELS)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	16774.761 ^a	.338	.499

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		
		Proficient		Percentage Correct
		0	1	
Step 1	Proficient	0	1	
		3452	2440	58.6
		961	16595	94.5
	Overall Percentage			85.5

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	GenderM	-.042	.040	1.080	1	.299	.959	.887	1.038
	Minority	-.142	.058	6.024	1	.014	.867	.774	.972
	LowIncome	-.271	.047	32.788	1	.000	.763	.695	.837
	ELL	-.632	.116	29.838	1	.000	.531	.424	.667
	SpEd	-1.099	.058	362.521	1	.000	.333	.298	.373
	FAY	.362	.108	11.266	1	.001	1.436	1.162	1.774
	TitleI	-.316	.049	41.061	1	.000	.729	.662	.803
	PriorProfScore	1.801	.026	4633.846	1	.000	6.055	5.749	6.377
	TeacherEffectBPRSGP	.027	.002	256.076	1	.000	1.027	1.024	1.031
	ImmersionGrade	-.137	.059	5.484	1	.019	.872	.777	.978
	Constant	-4.370	.154	803.691	1	.000	.013		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionGrade.

Logistic Regression (LA CRT)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	5376.018 ^a	.382	.565

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		
		Proficient		Percentage Correct
		0	1	
Step 1	Proficient	0	1	
		1271	820	60.8
		319	5912	94.9
	Overall Percentage			86.3

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	GenderM	-.104	.071	2.157	1	.142	.901	.785	1.035
	Minority	-.112	.101	1.219	1	.270	.894	.733	1.090
	LowIncome	-.242	.082	8.725	1	.003	.785	.669	.922
	ELL	-1.082	.210	26.471	1	.000	.339	.224	.512
	SpEd	-1.253	.098	162.813	1	.000	.286	.236	.346
	FAY	.391	.178	4.832	1	.028	1.479	1.043	2.096
	TitleI	-.143	.086	2.756	1	.097	.867	.732	1.026
	PriorProfScore	1.699	.046	1390.899	1	.000	5.468	5.001	5.978
	TeacherEffectBPRSGP	.072	.003	428.814	1	.000	1.075	1.067	1.082
	ImmersionGrade	.028	.102	.075	1	.784	1.028	.842	1.256
	Constant	-7.404	.302	599.237	1	.000	.001		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionGrade.

Logistic Regression (MA CRT)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	5723.057 ^a	.351	.519

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		
		Proficient		Percentage Correct
		0	1	
Step 1	Proficient	0	1	
		1191	878	57.6
		360	5810	94.2
	Overall Percentage			85.0

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	GenderM	.186	.068	7.437	1	.006	1.205	1.054	1.378
	Minority	-.454	.096	22.478	1	.000	.635	.526	.766
	LowIncome	-.369	.079	21.960	1	.000	.692	.593	.807
	ELL	-.466	.191	5.961	1	.015	.628	.432	.912
	SpEd	-1.115	.096	134.367	1	.000	.328	.272	.396
	FAY	.296	.175	2.846	1	.092	1.344	.953	1.895
	TitleI	.066	.085	.607	1	.436	1.068	.905	1.261
	PriorProfScore	1.397	.037	1410.765	1	.000	4.044	3.760	4.350
	TeacherEffectBPRSGP	.079	.003	571.198	1	.000	1.082	1.075	1.089
	ImmersionGrade	.102	.098	1.080	1	.299	1.107	.914	1.342
	Constant	-6.605	.277	567.103	1	.000	.001		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionGrade.

Logistic Regression (LA SAGE)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	19727.144 ^a	.467	.624

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		
		Proficient		Percentage Correct
		0	1	
Step 1	Proficient	0	1	
		9828	2461	80.0
		2050	11862	85.3
	Overall Percentage			82.8

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a								
GenderM	-.199	.036	30.670	1	.000	.819	.764	.879
Minority	-.091	.055	2.738	1	.098	.913	.819	1.017
LowIncome	-.360	.048	57.076	1	.000	.698	.636	.766
ELL	-.469	.133	12.361	1	.000	.626	.482	.813
SpEd	-.769	.065	140.558	1	.000	.464	.408	.527
FAY	.254	.133	3.621	1	.057	1.289	.992	1.674
TitleI	.006	.049	.014	1	.906	1.006	.914	1.107
PriorProfScore	2.018	.025	6334.064	1	.000	7.523	7.158	7.906
TeacherEffectBPRSGP	.061	.002	1410.543	1	.000	1.063	1.060	1.067
ImmersionGrade	-.004	.059	.005	1	.943	.996	.888	1.117
Constant	-7.863	.181	1895.274	1	.000	.000		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionGrade.

Logistic Regression (MA SAGE)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	17212.776 ^a	.517	.689

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted			
		Proficient		Percentage Correct	
		0	1		
Step 1	Proficient	0	10972	2003	84.6
		1	1829	11325	86.1
	Overall Percentage				85.3

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a								
GenderM	.003	.039	.004	1	.947	1.003	.929	1.082
Minority	-.124	.061	4.121	1	.042	.884	.784	.996
LowIncome	-.328	.052	40.171	1	.000	.720	.651	.797
ELL	-.564	.146	14.861	1	.000	.569	.427	.758
SpEd	-.556	.069	65.189	1	.000	.573	.501	.656
FAY	.395	.144	7.554	1	.006	1.485	1.120	1.968
TitleI	.118	.053	4.960	1	.026	1.126	1.014	1.249
PriorProfScore	2.206	.027	6756.778	1	.000	9.077	8.612	9.567
TeacherEffectBPRSGP	.064	.001	1861.130	1	.000	1.066	1.063	1.069
ImmersionGrade	.058	.064	.816	1	.366	1.060	.934	1.203
Constant	-8.891	.190	2200.917	1	.000	.000		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionGrade.

Logistic Regression (SC SAGE)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	14125.983 ^a	.433	.581

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		
		Proficient		Percentage Correct
		0	1	
Step 1	Proficient	0	1	
		5817	1772	76.7
		1484	8619	85.3
	Overall Percentage			81.6

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a								
GenderM	.273	.042	41.201	1	.000	1.313	1.208	1.427
Minority	-.308	.063	23.623	1	.000	.735	.649	.832
LowIncome	-.314	.055	32.593	1	.000	.730	.656	.814
ELL	-.616	.170	13.210	1	.000	.540	.387	.753
SpEd	-.886	.071	155.256	1	.000	.412	.359	.474
FAY	.289	.156	3.423	1	.064	1.336	.983	1.815
TitleI	-.046	.057	.650	1	.420	.955	.853	1.068
PriorProfScore	1.691	.027	4003.563	1	.000	5.425	5.148	5.717
TeacherEffectBPRSGP	.067	.002	1250.733	1	.000	1.069	1.065	1.073
ImmersionGrade	.023	.073	.097	1	.755	1.023	.886	1.182
Constant	-7.458	.207	1293.290	1	.000	.001		

a. Variable(s) entered on step 1: GenderM, Minority, LowIncome, ELL, SpEd, FAY, TitleI, PriorProfScore, TeacherEffectBPRSGP, ImmersionGrade.

Appendix E

Non-Immersion Student Regression Summary (Growth)
Non-Immersion Student Regression Outputs (Growth)

Non-Immersion Student Results: Growth

Statistical modeling (linear regression) was used to control for the inherent differences in academic growth attributable to the following variables: gender, minority, low income, English language learner status, special education status, mobility (full academic year), title I status, prior-year proficiency level, and teacher effect (classwide student growth). Since immersion classes are inherently different from non-immersion classes, we can't simply compare growth of immersion classes with growth of non-immersion classes. If we do, we will falsely conclude how immersion programs contribute to student growth. With statistical controls in place, we gain a better understanding of the true immersion effect. The tables below summarize the results of the linear regression analyses for each predictor. In order to not overstate results, the "closest to zero" number within a 95% confidence interval of the regression coefficient will be used in the interpretation. The models include test data for all non-immersion Davis district students during the past three years. This will help to determine whether having an immersion program in the school affects academic growth of non-immersion students.

Variable	Regression Coefficient (B)			Interpretation
	95% CI (low)	95% CI (high)	Closest to Zero	
English Language Arts (SAGE: 4th-6th Grades)				
Gender	-3.833	-2.547	-3	Predicted academic growth for males is reduced by 3 percentile points.
Minority	-1.935	0.053	0	Minority status has no effect on predicted academic growth.
Low Income	-4.070	-2.370	-2	Predicted academic growth for low income students is reduced by 2 percentile points.
English Language Learner	-3.656	0.319	0	ELL status has no effect on predicted academic growth.
Special Education	-9.943	-7.956	-8	Predicted academic growth for special education students is reduced by 8 percentile points.
Full Academic Year	-1.505	4.839	0	Full year enrollment has no effect on predicted academic growth.
Title I	-0.035	1.700	0	Title I school enrollment has no effect on predicted academic growth.
Prior Proficiency Level	-2.228	-1.554	-2	Each 1 point increase in prior year proficiency score results in a 2 percentile point decrease in predicted academic growth.
Teacher Effect	0.966	1.019	1	Each 1 point increase in teacher effect results in a 1 percentile point increase in predicted academic growth.
Immersion Student	-1.244	0.916	0	A school immersion program has no effect on predicted academic growth of non-immersion students.
Math (SAGE: 4th-6th Grades)				
Gender	-0.345	0.869	0	Gender has no effect on predicted academic growth.
Minority	-1.226	0.652	0	Minority status has no effect on predicted academic growth.
Low Income	-3.511	-1.913	-2	Predicted academic growth for low income students is reduced by 2 percentile points.
English Language Learner	-4.202	-0.488	0	ELL status has no effect on predicted academic growth.
Special Education	-7.878	-6.029	-6	Predicted academic growth for special education students is reduced by 6 percentile points.
Full Academic Year	2.609	8.568	3	Predicted academic growth for students who stay enrolled the whole year is increased by 3 percentile points.
Title I	0.114	1.739	0	Title I school enrollment has no effect on predicted academic growth.
Prior Proficiency Level	-1.584	-1.006	-1	Each 1 point increase in prior year proficiency score results in a 1 percentile point decrease in predicted academic growth.
Teacher Effect	0.982	1.022	1	Each 1 point increase in teacher effect results in a 1 percentile point increase in predicted academic growth.
Immersion Student	-1.076	0.985	0	A school immersion program has no effect on predicted academic growth of non-immersion students.
Science (SAGE: 5th-6th Grades)				
Gender	2.637	4.167	3	Predicted academic growth for males is increased by 3 percentile points.
Minority	-4.489	-2.143	-2	Predicted academic growth for minority students is decreased by 2 percentile points.
Low Income	-3.014	-0.984	-1	Predicted academic growth for low income students is reduced by 1 percentile points.
English Language Learner	-5.087	-0.124	0	ELL status has no effect on predicted academic growth.
Special Education	8.679	-6.278	-6	Predicted academic growth for special education students is reduced by 6 percentile points.
Full Academic Year	-0.655	6.986	0	Full year enrollment has no effect on predicted academic growth.
Title I	-0.224	1.853	0	Title I school enrollment has no effect on predicted academic growth.
Prior Proficiency Level	-2.247	-1.483	-1	Each 1 point increase in prior year proficiency score results in a 1 percentile point decrease in predicted academic growth.
Teacher Effect	0.969	1.030	1	Each 1 point increase in prior year proficiency score results in a 1 percentile point decrease in predicted academic growth.
Immersion Student	-1.479	1.251	0	A school immersion program has no effect on predicted academic growth of non-immersion students.

The following pages include the SPSS regression outputs.

Regression (LA SAGE)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.434 ^a	.188	.188	26.169

a. Predictors: (Constant), Immersion Grade, Prior Proficiency Score, Full Academic Year, Teacher Growth, Gender, English Language Learner, Title I, Special Education, Low Income, Minority

Coefficients^a

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	7.021	1.833
	Gender	-3.190	.328
	Minority	-.941	.507
	Low Income	-3.220	.434
	English Language Learner	-1.668	1.014
	Special Education	-8.949	.507
	Full Academic Year	1.667	1.619
	Title I	.833	.443
	Prior Proficiency Score	-1.891	.172
	Teacher Growth	.992	.014
	Immersion Grade	-.164	.551

Coefficients^a

Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		Beta			Lower Bound	Upper Bound
1	(Constant)		3.830	.000	3.428	10.614
	Gender	-.055	-9.726	.000	-3.833	-2.547
	Minority	-.012	-1.856	.063	-1.935	.053
	Low Income	-.046	-7.427	.000	-4.070	-2.370
	English Language Learner	-.010	-1.645	.100	-3.656	.319
	Special Education	-.106	-17.651	.000	-9.943	-7.956
	Full Academic Year	.006	1.030	.303	-1.505	4.839
	Title I	.011	1.881	.060	-.035	1.700
	Prior Proficiency Score	-.069	-10.997	.000	-2.228	-1.554
	Teacher Growth	.412	73.085	.000	.966	1.019
	Immersion Grade	-.002	-.297	.766	-1.244	.916

a. Dependent Variable: Student Growth Percentile

Regression (MA SAGE)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.527 ^a	.278	.278	24.670

a. Predictors: (Constant), Immersion Grade, Full Academic Year, Gender, English Language Learner, Teacher Growth, Special Education, Title I, Prior Proficiency Score, Low Income, Minority

Coefficients^a

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	-1.014	1.664
	Gender	.262	.310
	Minority	-.287	.479
	Low Income	-2.712	.408
	English Language Learner	-2.345	.947
	Special Education	-6.953	.472
	Full Academic Year	5.588	1.520
	Title I	.927	.415
	Prior Proficiency Score	-1.295	.147
	Teacher Growth	1.002	.010
	Immersion Grade	-.045	.526

Coefficients^a

Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		Beta			Lower Bound	Upper Bound
1	(Constant)		-.609	.542	-4.275	2.247
	Gender	.005	.845	.398	-.345	.869
	Minority	-.004	-.598	.550	-1.226	.652
	Low Income	-.039	-6.653	.000	-3.511	-1.913
	English Language Learner	-.015	-2.475	.013	-4.202	-.488
	Special Education	-.082	-14.744	.000	-7.878	-6.029
	Full Academic Year	.020	3.676	.000	2.609	8.568
	Title I	.013	2.236	.025	.114	1.739
	Prior Proficiency Score	-.051	-8.781	.000	-1.584	-1.006
	Teacher Growth	.517	97.291	.000	.982	1.022
	Immersion Grade	.000	-.086	.931	-1.076	.985

a. Dependent Variable: Student Growth Percentile

Regression (SC SAGE)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.456 ^a	.208	.207	25.623

a. Predictors: (Constant), Immersion Grade, Special Education, Full Academic Year, Teacher Growth, Gender, Minority, Title I, English Language Learner, Prior Proficiency Score, Low Income

Coefficients^a

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	1.824	2.181
	Gender	3.402	.390
	Minority	-3.316	.599
	Low Income	-1.999	.518
	English Language Learner	-2.606	1.266
	Special Education	-7.478	.612
	Full Academic Year	3.166	1.949
	Title I	.815	.530
	Prior Proficiency Score	-1.865	.195
	Teacher Growth	.999	.015
	Immersion Grade	-.114	.697

Coefficients^a

Model		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		Beta			Lower Bound	Upper Bound
1	(Constant)		.836	.403	-2.451	6.099
	Gender	.059	8.721	.000	2.637	4.167
	Minority	-.042	-5.540	.000	-4.489	-2.143
	Low Income	-.029	-3.861	.000	-3.014	-.984
	English Language Learner	-.015	-2.058	.040	-5.087	-.124
	Special Education	-.087	-12.213	.000	-8.679	-6.278
	Full Academic Year	.011	1.624	.104	-.655	6.986
	Title I	.011	1.537	.124	-.224	1.853
	Prior Proficiency Score	-.071	-9.567	.000	-2.247	-1.483
	Teacher Growth	.437	64.524	.000	.969	1.030
	Immersion Grade	-.001	-.164	.870	-1.479	1.251

a. Dependent Variable: Student Growth Percentile