

# TutorWorks

## 2005-06 ACADEMIC OUTCOMES EXECUTIVE SUMMARY

*Outcomes Analysis for the Ravenswood City School District's TutorWorks programs, supplemental educational services provided to Belle Haven, Brentwood and Green Oaks students as per the No Child Left Behind Act of 2001<sup>1</sup>*

### **Introduction**

During the 2005-06 school year, 230 kindergarten through fourth grade Ravenswood students at Belle Haven, Brentwood, and Green Oaks schools participated in the TutorWorks program per NCLB in order to improve their language arts skills, as measured by the California State Standards Examination for Language Arts (CST Language Arts). The purpose of this analysis is to examine TutorWorks participant performance on the CST Language Arts test.

### **Student Sample**

#### ***Experimental (TutorWorks) Group***

The Ravenswood experimental sample consisted of all third and fourth grade students at Belle Haven, Brentwood and Green Oaks schools who were selected under NCLB to participate in the TutorWorks program during the 2005-06 school year and who had documented CST Language Arts results for both 2004-05 and 2005-06. Of the 230 students who participated in the program, 75 students met these criteria. The analyses also examined sub groups within the experimental group including participants who met curricula goals and Beginning English Learners.

#### ***Control Group***

The Ravenswood control sample consisted of all third and fourth grade students at Belle Haven, Brentwood and Green Oaks schools who were not in the TutorWorks Program in the 2005-06 school year and who had documented CST Language Arts results for both 2004-05 and 2005-06; 181 students met these criteria.

### **Statistical Analysis**

To investigate the effects of the TutorWorks program on CST Language Arts performance, a frequency chi-square test was performed on the data using the CST Language Arts Performance Levels. In addition, a 2x2 repeated-measures mixed-factor ANOVA was performed on the data, using the CST Language Arts 2004-05 and 2005-06 scaled scores as a repeated measure (within-subjects factor) and the experimental (TutorWorks) and control groups as a between-subjects factor. In addition, two-sample t-tests were performed to determine simple effects in cases not covered by the ANOVA. The analyses included an examination of subgroups including participants who met curricula goals and Beginning English Learners.

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<sup>1</sup> Analyses completed by Dr. Eric Person in November 2006 using data provided by the Ravenswood City School District.

## All Ravenswood Students - CST Performance Level

Student achievement on the CST is reported using one of five performance levels:

- Advanced (5) performance in relation to the content standards tested
- Proficient (4) performance in relation to the content standards tested
- Basic (3) performance in relation to the content standards tested
- Below Basic (2) performance in relation to the content standards tested
- Far Below Basic (1) performance in relation to the content standards tested

Students in Ravenswood improved their average CST Language Arts performance level from 2.39 to 2.63 or 10%.

### All Ravenswood Students CST Performance Level Summary Statistics

		CSTLangu age04_05	CSTLangu age05_06
N	Valid	256	256
	Missing	0	0
Mean		2.39	2.63
Median		2.00	3.00
Mode		2	3
Std. Deviation		1.000	1.013
Variance		1.001	1.026
Skewness		.305	.089
Std. Error of Skewness		.152	.152
Kurtosis		-.483	-.373
Std. Error of Kurtosis		.303	.303
Minimum		1	1
Maximum		5	5
Sum		613	673
Percentiles	25	2.00	2.00
	50	2.00	3.00
	75	3.00	3.00

In 2004-05, 13.3% of Ravenswood students scored at a proficient level or above, while in 2005-06, 16.8% of students scored at a proficient level or above. This represents an improvement of 3.5%. Moreover, in 2004-05, 55.1% of Ravenswood students scored at a below basic level or far below basic level, while in 2005-06, 41.8% of students scored at a below basic level or far below basic level. This represents a decrease of students scoring in the below basic level or far below basic level of 13.3%. The chi-square test performed on the CST Language Arts Performance Level improvement for all Ravenswood students indicates that the change in performance level was highly statistically significant ( $p=.001$ ).

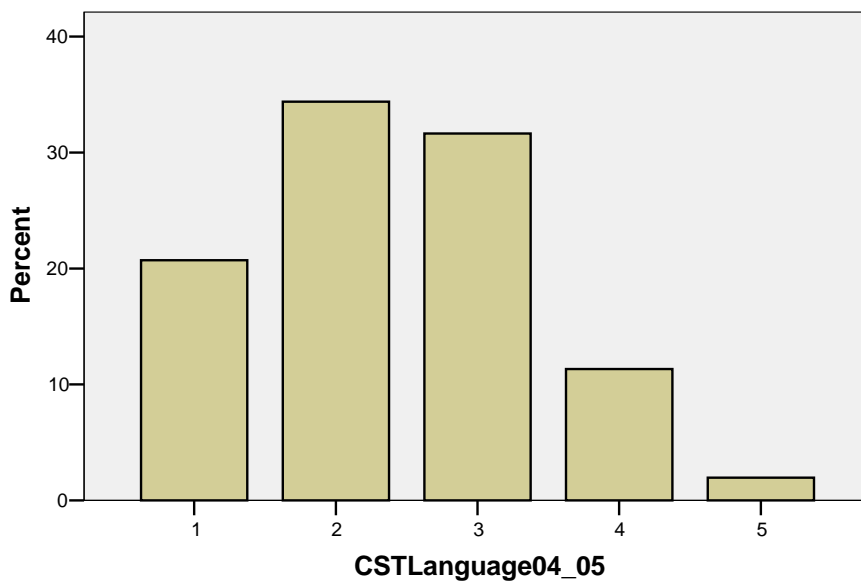
### All Ravenswood Students CST Language Arts Performance Level 2004-05 Frequency Table

	Frequency	Valid Percent	Cumulative Percent
Valid 1	53	20.7	20.7
2	88	34.4	55.1
3	81	31.6	86.7
4	29	11.3	98.0
5	5	2.0	100.0
Total	256	100.0	

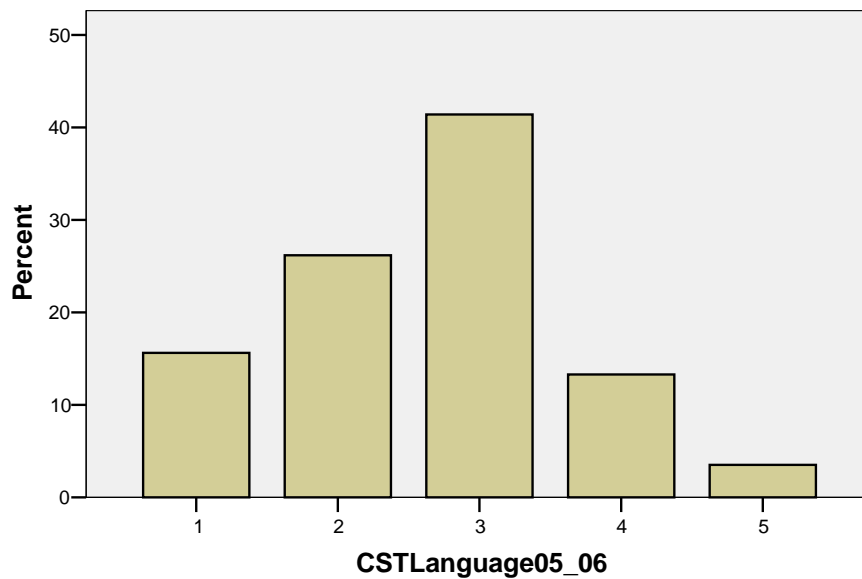
**All Ravenswood Students CST Language Arts Performance Level 2005-06 Frequency Table**

	Frequency	Valid Percent	Cumulative Percent
Valid 1	40	15.6	15.6
2	67	26.2	41.8
3	106	41.4	83.2
4	34	13.3	96.5
5	9	3.5	100.0
Total	256	100.0	

**All Ravenswood Students CST Language Arts Performance Level 2004-05 Frequency Bar Graph**



**All Ravenswood Students CST Language Arts Performance Level 2005-06 Frequency Bar Graph**



**CST Language Arts Performance Level 2005-06  
Expected Frequencies**

	Observed N	Expected N	Residual
1	40	53.0	-13.0
2	67	88.0	-21.0
3	106	81.0	25.0
4	34	29.0	5.0
5	9	5.0	4.0
Total	256		

**Chi-Square Test Statistics**

<b>CST Language Arts Performance Level 2005-06</b>	
Chi-square(a)	19.978
df	4
Asymp. Sig.	.001

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 5.0.

**Experimental Group Students (TutorWorks) - CST Performance Level**

The experimental group, made up of Ravenswood students who participated in TutorWorks, improved their average CST Language Arts performance level from 2.19 to 2.49 or 14%.

**TutorWorks Students CST Performance Level Summary Statistics**

		CSTLangu age04_05	CSTLangu age05_06
N	Valid	75	75
	Missing	0	0
Mean		2.19	2.49
Median		2.00	3.00
Mode		2	3
Std. Deviation		.817	.950
Variance		.667	.902
Skewness		.404	.020
Std. Error of Skewness		.277	.277
Kurtosis		.617	-.447
Std. Error of Kurtosis		.548	.548
Minimum		1	1
Maximum		5	5
Sum		164	187
Percentiles	25	2.00	2.00
	50	2.00	3.00
	75	3.00	3.00

In 2004-05, 2.6% of TutorWorks students scored at a proficient level or above, while in 2005-06, 12% of students scored at a proficient level or above. This represents an improvement of 9.4%. Moreover, in 2004-05, 65.3% of Non-TutorWorks students scored at a below basic level or far below basic level, while in 2005-06, 46.7% of students scored at a below basic level or far below basic level. This represents a

decrease of students scoring in the below basic level or far below basic level of 18.6%. The chi-square test performed on the CST Language Arts Performance Level improvement for TutorWorks students indicates that the change in performance level was highly statistically significant ( $p < .001$ ).

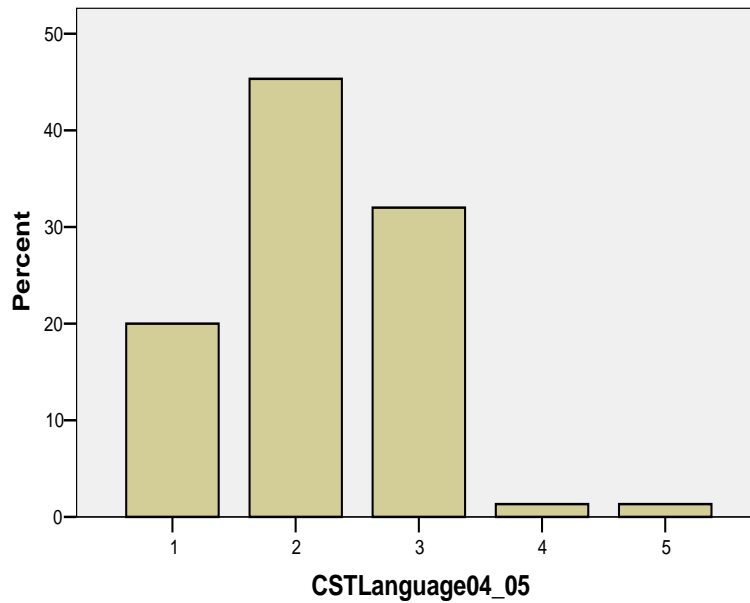
**TutorWorks Students CST Language Arts Performance Level 2004-05 Frequency Table**

		Frequency	Valid Percent	Cumulative Percent
Valid	1	15	20.0	20.0
	2	34	45.3	65.3
	3	24	32.0	97.3
	4	1	1.3	98.7
	5	1	1.3	100.0
	Total	75	100.0	

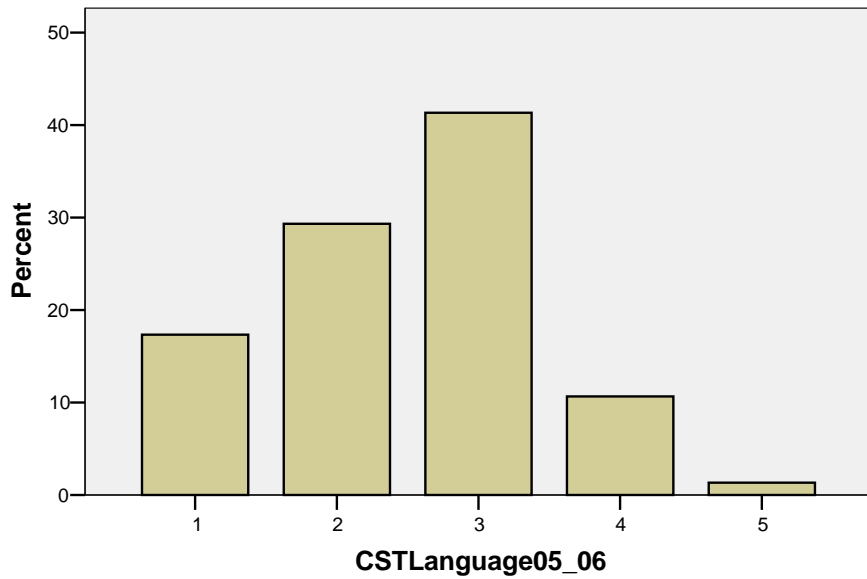
**TutorWorks Students CST Language Arts Performance Level 2005-06 Frequency Table**

		Frequency	Valid Percent	Cumulative Percent
Valid	1	13	17.3	17.3
	2	22	29.3	46.7
	3	31	41.3	88.0
	4	8	10.7	98.7
	5	1	1.3	100.0
	Total	75	100.0	

**TutorWorks Students CST Language Arts Performance Level 2004-05 Frequency Bar Graph**



**TutorWorks Students CST Language Arts Performance Level 2005-06 Frequency Bar Graph**



**CST Language Arts Performance Level 2005-06  
Expected Frequencies**

	Observed N	Expected N	Residual
1	13	15.0	-2.0
2	22	34.0	-12.0
3	31	24.0	7.0
4	8	1.0	7.0
5	1	1.0	.0
Total	75		

**Chi-Square Test Statistics**

	CST Language Arts Performance Level 2005-06
Chi-square(a)	55.544
df	4
Asymp. Sig.	.000

a 2 cells (40.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1.0.

## Control Group Students (Non-TutorWorks) - CST Performance Level

The control group, made up of Ravenswood students who did not participate in the TutorWorks program, improved their average CST Language Arts performance level from 2.48 to 2.69 or 8%.

### Non-TutorWorks Students CST Performance Level Summary Statistics

		CSTLangu age04_05	CSTLangu age05_06
N	Valid	181	181
	Missing	0	0
Mean		2.48	2.69
Median		2.00	3.00
Mode		3	3
Std. Deviation		1.057	1.036
Variance		1.118	1.072
Skewness		.194	.086
Std. Error of Skewness		.181	.181
Kurtosis		-.752	-.375
Std. Error of Kurtosis		.359	.359
Minimum		1	1
Maximum		5	5
Sum		449	486
Percentiles	25	2.00	2.00
	50	2.00	3.00
	75	3.00	3.00

In 2004-05, 17.7% of Non-TutorWorks students scored at a proficient level or above, while in 2005-06, 18.8% of students scored at a proficient level or above. This represents an improvement of 1.1%. Moreover, in 2004-05, 50.8% of Non-TutorWorks students scored at a below basic level or far below basic level, while in 2005-06, 39.8% of students scored at a below basic level or far below basic level. This represents a decrease of students scoring in the below basic level or far below basic level of 11%. The Chi-square test performed on the CST Language Arts Performance Level improvement for non-TutorWorks students indicates that the change in performance level was statistically significant ( $p=.006$ ).

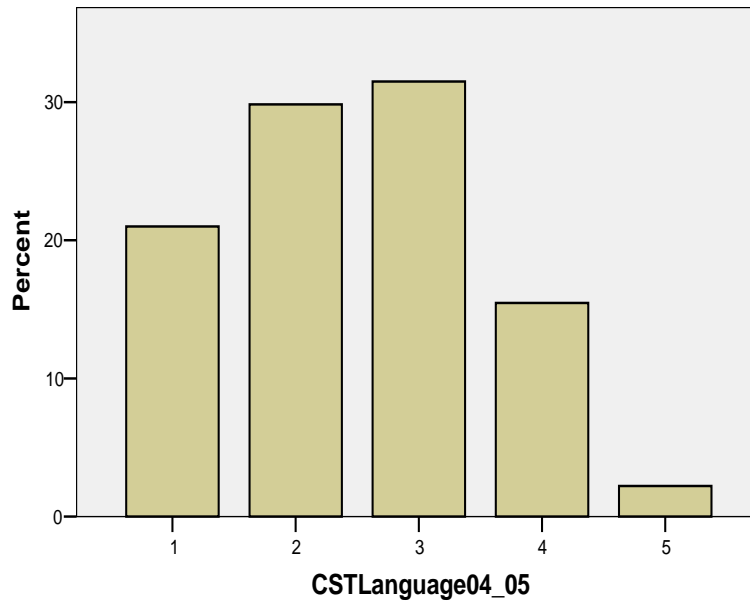
### Non-TutorWorks Students CST Language Arts Performance Level 2004-05 Frequency Table

	Frequency	Valid Percent	Cumulative Percent
Valid	1	38	21.0
	2	54	29.8
	3	57	31.5
	4	28	15.5
	5	4	2.2
Total	181	100.0	100.0

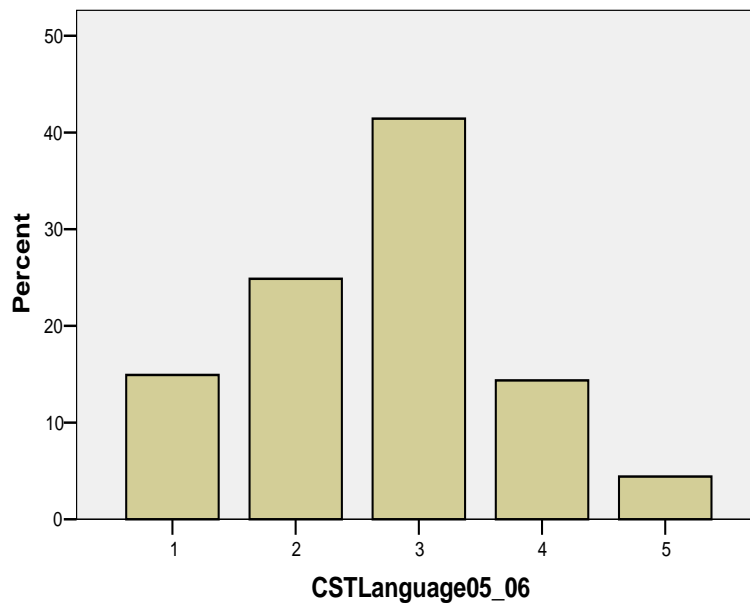
**Non-TutorWorks Students CST Language Arts Performance Level 2005-06 Frequency Table**

		Frequency	Valid Percent	Cumulative Percent
Valid	1	27	14.9	14.9
	2	45	24.9	39.8
	3	75	41.4	81.2
	4	26	14.4	95.6
	5	8	4.4	100.0
	Total	181	100.0	

**Non-TutorWorks Students CST Language Arts Performance Level 2004-05 Frequency Bar Graph**



**Non-TutorWorks Students CST Language Arts Performance Level 2005-06 Frequency Bar Graph**



**CST Language Arts Performance Level 2005-06  
Expected Frequencies**

	Observed N	Expected N	Residual
1	27	38.0	-11.0
2	45	54.0	-9.0
3	75	57.0	18.0
4	26	28.0	-2.0
5	8	4.0	4.0
Total	181		

**Chi-Square Test Statistics**

	CST Language Arts Performance Level 2005-06
Chi-square(a)	14.511
df	4
Asymp. Sig.	.006

a. 1 cells (20.0%) have expected frequencies less than 5. The minimum expected cell frequency is 4.0.

**Experimental Group Beginning English Learners (TutorWorks) – CST  
Performance Level**

TutorWorks Beginning English Learners, students who received a performance level of 1 on the CELT test in the fall of 2004-05, improved in their average CST Language Arts performance level from 2.13 to 2.38 or 12%.

**TutorWorks Beginning English Learners CST Performance Level Summary Statistics**

		CSTLangu age04_05	CSTLangu age05_06
N	Valid	8	8
	Missing	0	0
Mean		2.13	2.38
Median		2.00	3.00
Mode		2	3
Std. Deviation		.641	.916
Variance		.411	.839
Skewness		-.068	-.999
Std. Error of Skewness		.752	.752
Kurtosis		.741	-1.039
Std. Error of Kurtosis		1.481	1.481
Minimum		1	1
Maximum		3	3
Sum		17	19
Percentiles	25	2.00	1.25
	50	2.00	3.00
	75	2.75	3.00

In 2004-05, 75% of TutorWorks students who were Beginning English Learners scored at the far below basic or below basic levels, while in 2005-06, only 37.5% of TutorWorks Beginning English Learners scored at the far below basic or below basic levels. This represents a decrease of Beginning English Learners scoring in the below basic level or far below basic level of 37.5%. The Chi-square test performed on the CST Language Arts Performance Level improvement for TutorWorks Beginning English Learners indicates that the change in performance level was statistically significant ( $p < .013$ ).

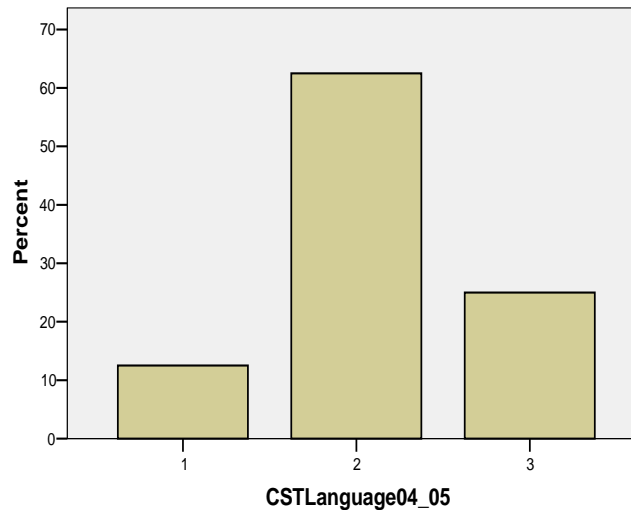
**TutorWorks Beginning English Learners CST Language Arts Performance Level 2004-05  
Frequency Table**

	Frequency	Valid Percent	Cumulative Percent
Valid 1	1	12.5	12.5
2	5	62.5	75.0
3	2	25.0	100.0
Total	8	100.0	

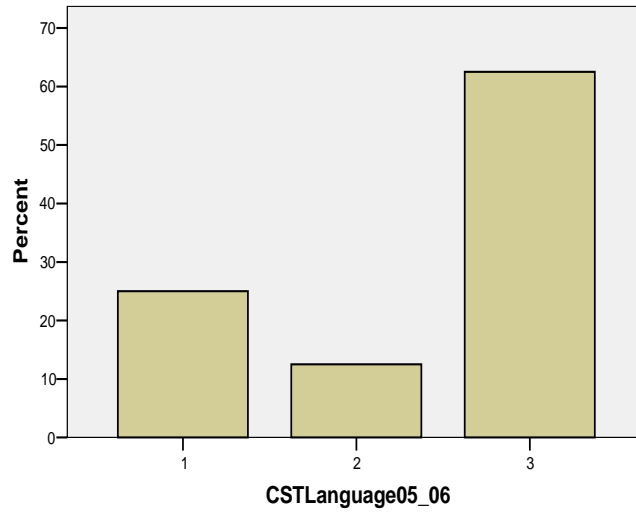
**TutorWorks Beginning English Learners CST Language Arts Performance Level 2005-06  
Frequency Table**

	Frequency	Valid Percent	Cumulative Percent
Valid 1	2	25.0	25.0
2	1	12.5	37.5
3	5	62.5	100.0
Total	8	100.0	

**TutorWorks Beginning English Learners CST Language Arts Performance Level 2004-05  
Frequency Bar Graph**



**TutorWorks Beginning English Learners CST Language Arts Performance Level 2005-06  
Frequency Bar Graph**



**TutorWorks Beginning English Learners CST  
Language Arts Performance Level 2005-06  
Expected Frequencies**

	Observed N	Expected N	Residual
1	2	1.0	1.0
2	1	5.0	-4.0
3	5	2.0	3.0
Total	8		

**Chi-Square Test Statistics**

	<b>CST Language Arts Performance Level 2005-06</b>
Chi-square(a)	8.700
df	2
Asymp. Sig.	.013

a 2 cells (66.7%) have expected frequencies less than 5. The minimum expected cell frequency is 1.0.

## Control Group Beginning English Learners (Non-TutorWorks) – CST Performance Level

Beginning English Learners, students who received a performance level of 1 on the CELT test in the fall of 2004-05, who were not in the TutorWorks program showed a decline in their average CST Language Arts performance level from 2.63 to 2.46 or 6%.

### Non-TutorWorks Beginning English Learners CST Performance Level Summary Statistics

		CSTLanguage04_05	CSTLanguage05_06
N	Valid	24	24
	Missing	0	0
Mean		2.63	2.46
Median		3.00	3.00
Mode		3	3
Std. Deviation		1.096	1.285
Variance		1.201	1.650
Skewness		.193	.369
Std. Error of Skewness		.472	.472
Kurtosis		-.490	-.702
Std. Error of Kurtosis		.918	.918
Minimum		1	1
Maximum		5	5
Sum		63	59
Percentiles	25	2.00	1.00
	50	3.00	3.00
	75	3.00	3.00

In 2004-05, 45.8% of Non-TutorWorks students who were Beginning English Learners scored at the far below basic or below basic levels; again in 2005-06, 45.8% of Non-TutorWorks Beginning English Learners scored at the far below basic or below basic levels. This represents no change in the Beginning English Learners who scored in the below basic level or far below basic levels between the two years. The chi-square test performed on the CST Language Arts Performance Level for Non-TutorWorks students indicates that the decline in performance was not statistically significant.

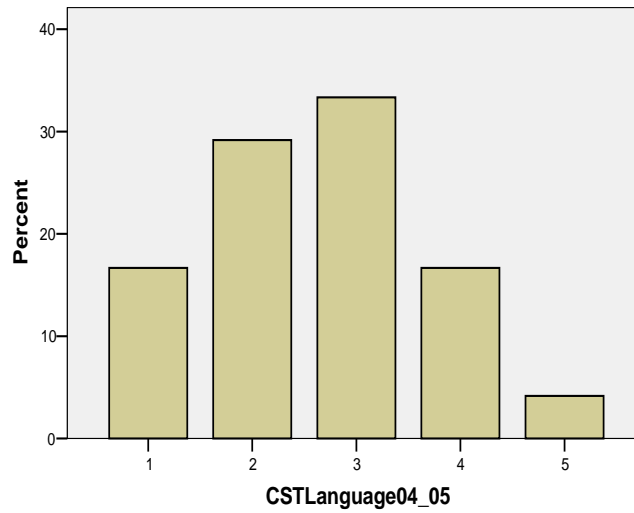
### Non-TutorWorks Beginning English Learners CST Language Arts Performance Level 2004-05 Frequency Table

	Frequency	Valid Percent	Cumulative Percent
Valid 1	4	16.7	16.7
2	7	29.2	45.8
3	8	33.3	79.2
4	4	16.7	95.8
5	1	4.2	100.0
Total	24	100.0	

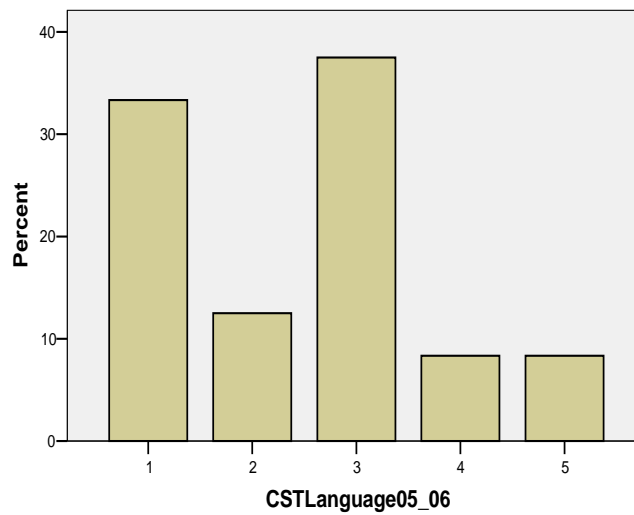
**Non-TutorWorks Beginning English Learners CST Language Arts Performance Level 2005-06  
Frequency Table**

	Frequency	Valid Percent	Cumulative Percent
Valid 1	8	33.3	33.3
2	3	12.5	45.8
3	9	37.5	83.3
4	2	8.3	91.7
5	2	8.3	100.0
Total	24	100.0	

**Non-TutorWorks Beginning English Learners CST Language Arts Performance Level 2004-05  
Frequency Bar Graph**



**Non-TutorWorks Beginning English Learners CST Language Arts Performance Level 2005-06  
Frequency Bar Graph**



**Non-TutorWorks CST Language Arts Performance Level 2005-06  
Expected Frequencies**

	Observed N	Expected N	Residual
1	8	4.0	4.0
2	3	7.0	-4.0
3	9	8.0	1.0
4	2	4.0	-2.0
5	2	1.0	1.0
Total	24		

**Chi-square test Statistics**

	<b>CST Language Arts Performance Level 2005-06</b>
Chi-square(a)	8.411
df	4
Asymp. Sig.	.078

a. 3 cells (60.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1.0.

**Impact on Participants - CST Scaled Score Performance**

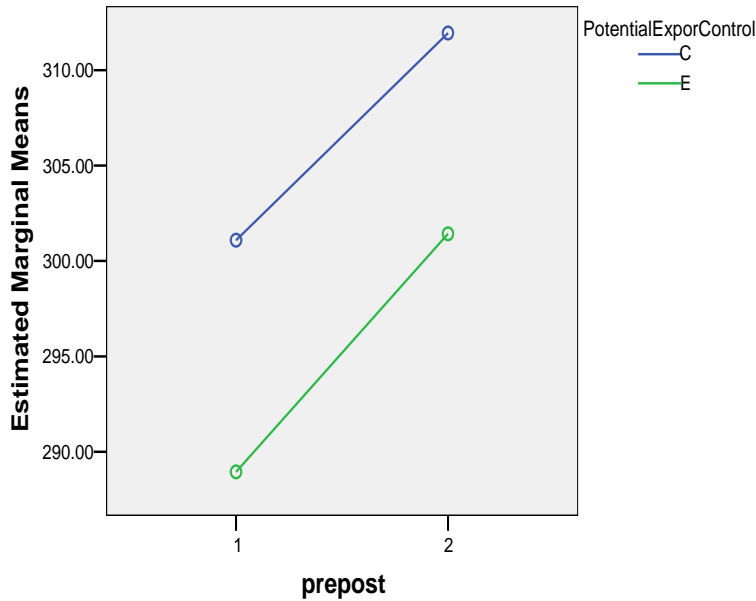
Students in Ravenswood improved their average CST Language Arts Scaled Score from 297.45 to 308.87 or an average of 11.42 points. This improvement was highly statistically significant ( $p < .001$ ). TutorWorks participants (E) improved their average CST Language Arts Scaled Score from 288.95 to 301.43 or an average of 12.48 points. The control group made up students who did not participate in TutorWorks (C) improved their average CST Language Arts Scaled Score from 301.09 to 311.95 or an average of 10.86 points. The difference in improvement between the experimental and control groups was not statistically significant.

**Impact on Participants - CST Scaled Score Performance Descriptive Statistics**

Group		Mean	Std. Deviation	N
CSTLanguageScaledScore04_05	C	301.0884	49.64790	181
	E	288.9467	38.09763	75
	Total	297.5313	46.81661	256
CSTLanguageScaledScore05_06	C	311.9503	51.08243	181
	E	301.4267	41.18619	75
	Total	308.8672	48.55131	256

**Impact on Participants - CST Performance Profile Plots**

**Estimated Marginal Means of cstls**



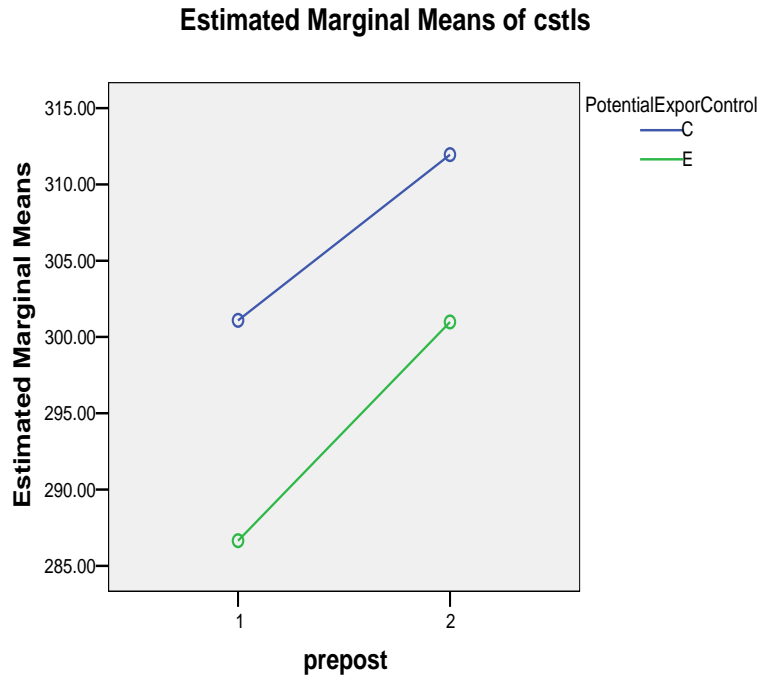
**Impact on Participants who met Curricula Goals - CST Scaled Score Performance**

Participants in TutorWorks had individualized curricula goals based on pre-tests at the beginning of the program. Student goals included completing a minimum number of Explode the Code curriculum units and improving Study Island performance by a specific percentage. TutorWorks participants who met their curricula goals (E) improved their average CST Language Arts Scaled Score from 286.65 to 300.98, or an average of 14.33 points. Students in the control group who did not participate in TutorWorks (C) improved their average CST Language Arts Scaled Score from 301.09 to 311.95 or an average of 10.86 points. The difference in improvement between the experimental group and control groups was not statistically significant.

**Participants who met Curricula Goals - CST Scaled Score Performance Descriptive Statistics**

Group		Mean	Std. Deviation	N
CSTLanguageScaledScore04_05	C	301.0884	49.64790	181
	E	286.6508	29.84160	63
	Total	297.3607	45.75108	244
CSTLanguageScaledScore05_06	C	311.9503	51.08243	181
	E	300.9841	36.68413	63
	Total	309.1189	47.95186	244

**Participants who met Curricula Goals - CST Scaled Score Performance Profile Plots**



**Impact on Beginning English Learners - CST Scaled Score Performance**

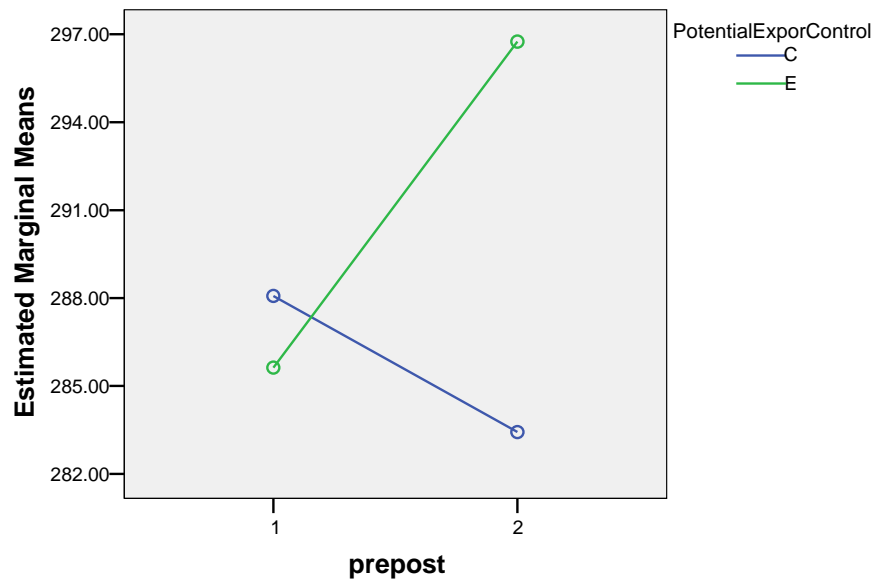
Beginning English Learners, students who received a performance level of 1 on the CELT test in the fall of 2004-05, improved their average CST Language Arts Scaled Score from 287.18 to 288.27 or 1.09. This improvement was not statistically significant. Beginning English Learners who did not participate in TutorWorks (C) showed a decline in their average CST Language Arts Scaled Score from 288.07 to 283.43 or an average of 4.64 points. In contrast, TutorWorks participants (E) improved their average CST Language Arts Scaled Score from 285.63 to 296.75 or an average of 11.13 points. The difference in improvement between the experimental group and control groups was not statistically significant.

**Beginning English Learners - CST Scaled Score Performance Descriptive Statistics**

Group		Mean	Std. Deviation	N
CST Language Scaled Score 04-05	C	288.0714	53.87944	14
	E	285.6250	30.04253	8
	Total	287.1818	45.81914	22
CST Language Scaled Score 05-06	C	283.4286	52.22542	14
	E	296.7500	44.40640	8
	Total	288.2727	48.87514	22

## Beginning English Learners - CST Performance Profile Plots

### Estimated Marginal Means of cstls



## Discussion

Ravenswood students at Belle Haven, Brentwood and Green Oaks schools improved their performance on the CST from 2004-05 to 2005-06. Both the experimental (TutorWorks) and control (Non-TutorWorks) groups showed improvement. The TutorWorks students improved more than the Non-TutorWorks students; however this difference was not statistically significant. It is difficult to show statistical significance due to the small sample size and the substantial growth of both the experimental and control groups. In addition, the experimental and control groups had dissimilar 2004-05 CST test scores. A better comparison would involve an experimental and control group with similar pre-test scores. If practicable, students with similar pre-test scores should be randomly chosen to participate in the intervention to create similar experimental and control groups.

Ravenswood students at Belle Haven, Brentwood, and Green Oaks schools showed highly statistically significant gains in their CST Language Arts performance levels. A greater percentage of students at these schools performed at the proficient and advanced performance levels in 2005-06 (16.8%) compared to 2004-05 (13.3%). Moreover, a smaller percentage of students at these schools scored in the below basic and the far below basic levels in 2005-06 (41.8%) compared to 2004-05 (55.1%). Both the control (Non-TutorWorks students) and experimental (TutorWorks students) groups showed gains in their CST Language Arts performance levels; however, the TutorWorks students show highly statistically significant gains, while the Non-TutorWorks students showed statistically significant gains. Non-TutorWorks students showed only a small gain (1.1%) in the percentage of proficient and advanced level students in 2005-06 (18.8%) compared to 2004-05 (17.7%). However, there was a strong decrease (11%) in the percentage of below basic and far below basic level students among the Non-TutorWorks students in 2005-06 (39.8%) compared to 2004-05 (50.8%). TutorWorks participants showed both a strong gain (9.4%) in the percentage of proficient and advanced level students and a substantial decline (18.6%) in the percentage of below basic and far below basic level students in 2005-06 (12% and 46.7% respectively) compared to 2004-05 (2.5% and 65.3% respectively)

The chi-square test performed on the data investigates the difference in the frequency of performance levels in 2005-06 from what is expected given the performance levels in 2004-05. The chi-square test allows us to

make conclusions regarding improved performance on the CST. The statistically significant results indicate that there is a significant difference in the frequency of the performance levels which is caused by students improving their performance levels beyond what is expected given the performance levels in 2004-05. TutorWorks students' highly statistically significant gains ( $p < .001$ ) had much greater significance than the gains of the Non-TutorWorks students ( $p < .01$ ). This is meaningful since the experimental group (TutorWorks) was approximately half the size of the control group. Statistical significance is much harder to achieve with small sample sizes. These results imply that the TutorWorks Program has a positive impact on participants' CST Language Arts Performance Levels.

Moreover, the impact on Beginning English Learners is noteworthy. The Beginning English Learners control group showed a non-statistically significant decline in their CST performance levels. However, the TutorWorks Beginning English Learners made a statistically significant gain ( $p = .013$ ) on their CST performance levels. This is remarkable because this significance was achieved with a very small sample size ( $N = 8$ ). These results imply that the TutorWorks intervention is especially helpful to Beginning English Learners. Further investigation should be done on a larger sample of students to better understand this effect.

Ravenswood students improved their average CST scaled score 11.42 points from 2004-05 (297.45) to 2005-06 (308.87). This improvement was highly statistically significant ( $p < .001$ ). The purpose of the ANOVA analyses is to investigate two factors at once: performance from 2004-05 to 2005-06 and performance between the experimental and control groups. No conclusions can be made regarding the CST scaled score improvement using the ANOVA because the scales are not same from year to year. Therefore we cannot draw the conclusion that the statistically significant gains of all Ravenswood students from 2004-05 to 2005-06 implies that student performance improved. However the ANOVA analyses allow us to draw conclusions regarding whether or not the experimental and control groups performed differently. The ANOVA analyses did not find a significant differences between the experimental and control groups. This is likely due to the fact that both groups improved their CST scaled scores substantially in 2005-06. A larger sample size or a larger performance difference (e.g. one group doesn't improve but the other group does improve) is needed to achieve statistical significance.

The chi-square test indicates that Ravenswood students at Belle Haven, Brentwood and Green Oaks schools improved their performance levels on the CST in 2005-06. A greater percentage of students are performing at the proficient and advanced levels and lower percentage of students are performing at the far below basic and below basic levels. The TutorWorks participants showed greater movement from the far below basic and below basic levels and to the proficient and advanced levels than students in the control group. Moreover the difference between the performance levels in 2004-05 and 2005-06 were highly statistically significant for the TutorWorks participants while the difference was statistically significant for the control group. Beginning English Learners who received the TutorWorks intervention showed dramatic improvement relative to the control group on their CST performance levels. The ANOVA analyses do not provide more information regarding the differences between the experimental and control groups as the differences were not significant.

# APPENDIX A

## DETAILED PROGRAM DESCRIPTION

### Program Summary

TutorWorks is a results-driven literacy intervention program that uses an innovative approach to help children acquire the literacy skills they need to be successful. The TutorWorks model is based upon sound academic research on skill acquisition and more than 15 years of practical experience in the field of supplemental educational services. TutorWorks conducts computer-aided tutorial sessions after school on school campuses. TutorWorks delivers targeted literacy intervention in partnership with local school districts and after-school centers. The program serves primarily disadvantaged and language minority children. TutorWorks' technology-based approach provides precise intervention where it is needed so that limited academic time is best utilized. Assessment tools allow extensive diagnostic and evaluative analysis of the students and programs. The exciting games and incentives motivate children to improve over time. TutorWorks focuses on one piece of the after-school experience: quality literacy enrichment, which provides a critical academic component for children.

### Programming Overview

The TutorWorks program used a computer-aided curriculum, web-based motivational and assessment tools, and an incentive-based approach. Teachers and para-professionals acted as academic coaches, providing academic assistance, one-on-one tutoring and encouragement. The Ravenswood TutorWorks Program served Kindergarten – 4<sup>th</sup> grade participants in three different schools – Belle Haven, Brentwood and Green Oaks.

Number of Students	230 Students
Participation (Days/Week)	3 - 5 days/week
Number of Weeks	15 weeks
Curricula	Study Island CST Prep Language Arts CW: Explode the Code Waterford Early Learning Program

### Schedule

The program ran every day. Students were expected to attend a minimum of 3 sessions per week. The remaining weeks were run according to the following schedule:

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Focus 1	Explode the Code	Explode the Code	Explode the Code	Explode the Code	Explode the Code or Study Island
Focus 2	Study Island	Study Island	Study Island	Study Island	Reward Time

Students worked for 20 minutes in each focus area.

### Site Staff

The staff/student ratio was no less than 1/10. Each site includes a program manager and teacher mentor. Some sites also included academic coaches.

*Teacher Mentor:* CDE Teacher acted as resource staff. The teacher mentored the program manager and academic coaches, providing academic direction and support. The teacher also provided direct instruction to students.

*Program Manager (PM):* The program manager was responsible for the logistical and technical execution of the program, including setting up the computers, uploading data, and closing procedures. The PM was present during every TutorWorks session.

*Academic Coaches:* Academic coaches were aides who provided academic and motivational support to students during the TutorWorks sessions.