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2005-06 ACADEMIC OUTCOMES EXECUTIVE SUMMARY

Outcomes Analysis for the Ravenswood City School District's SES programs, (supplemental educational services) program provided to Belle Haven, Brentwood and Green Oaks students as per the No Child Left Behind Act of 2001¹

Introduction

During the 2005-06 school year, 230 kindergarten through fourth grade Ravenswood students at Belle Haven, Brentwood, and Green Oaks schools participated in an SES program conducted by the SES provider TutorWorks 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 participant performance on the CST Language Arts test.

Student Sample

Experimental (ETC Online) 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 SES 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 SES 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 ETC Online 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 (ETC Online) 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.

¹ 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

| | | CST Language 04_05 | CST Language 05_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 ($p=.001$).

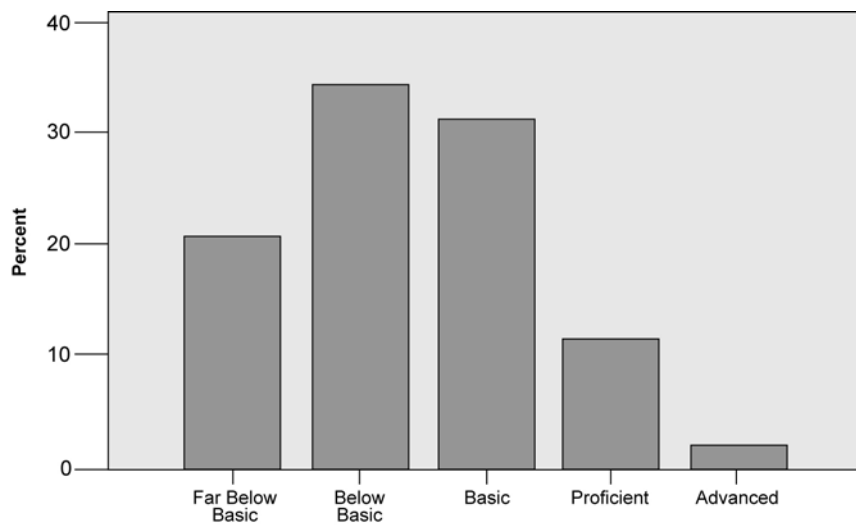
All Ravenswood Students CST Language Arts Performance Level 2004-05 Frequency Table

| | 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

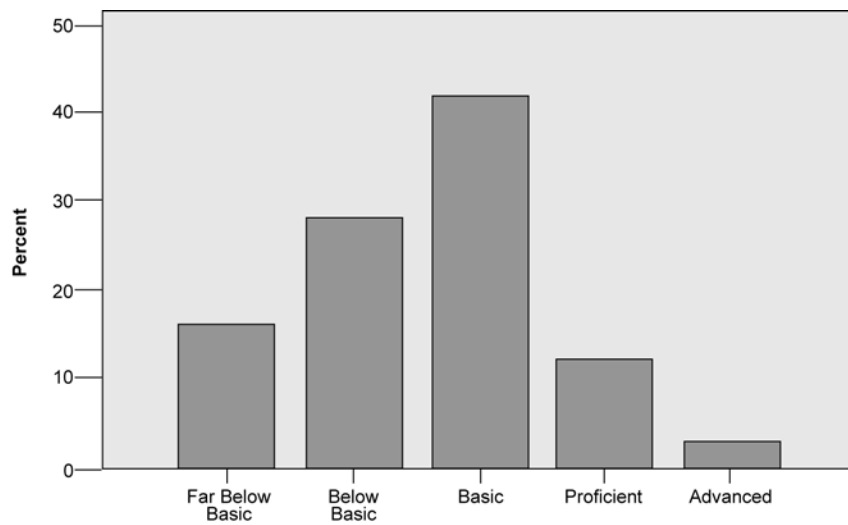
| | Frequency | Valid Percent | Cumulative Percent |
|---------|-----------|---------------|--------------------|
| Valid 1 | 40 | 15.6 | 15.6 |
| 2 | 67 | 26.2 | 41.8 |
| 3 | 106 | 41.4 | 83.2 |
| 4 | 34 | 13.3 | 96.5 |
| 5 | 9 | 3.5 | 100.0 |
| Total | 256 | 100.0 | |

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



CST Language 04-05

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



CST Language 05-06

**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

| | CST Language Arts Performance Level 2005-06 |
|---------------|--|
| 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 (ETC Online) - CST Performance Level

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

ETC Online Students CST Performance Level Summary Statistics

| | | CSTLanguage 04_05 | CSTLanguage 05_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 ETC Online 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-ETC Online 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 ETC Online students indicates that the change in performance level was highly statistically significant ($p < .001$).

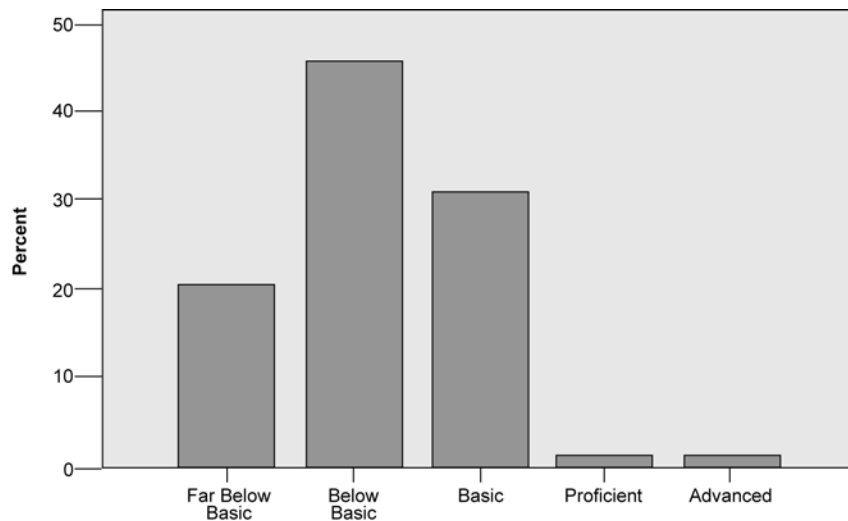
ETC Online Students CST Language Arts Performance Level 2004-05 Frequency Table

| | | 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 | |

ETC Online Students CST Language Arts Performance Level 2005-06 Frequency Table

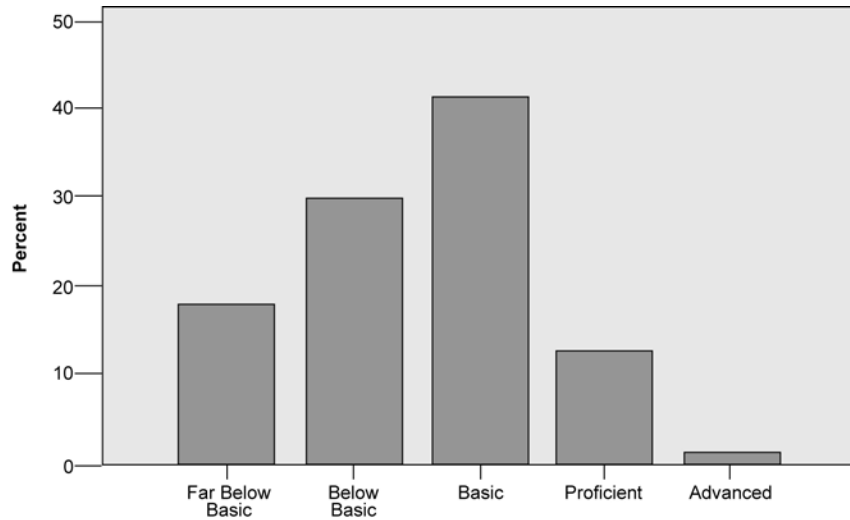
| | | Frequency | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------------|--------------------|
| Valid | 1 | 13 | 17.3 | 17.3 |
| | 2 | 22 | 29.3 | 46.7 |
| | 3 | 31 | 41.3 | 88.0 |
| | 4 | 8 | 10.7 | 98.7 |
| | 5 | 1 | 1.3 | 100.0 |
| | Total | 75 | 100.0 | |

ETC Online Students CST Language Arts Performance Level 2004-05 Frequency Bar Graph



CST Language 04-05

ETC Online Students CST Language Arts Performance Level 2005-06 Frequency Bar Graph



CST Language 05-06

**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-ETC Online) - CST Performance Level

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

Non-ETC Online Students CST Performance Level Summary Statistics

| | | CSTLanguage 04_05 | CSTLanguage 05_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-ETC Online 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-ETC Online 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-ETC Online students indicates that the change in performance level was statistically significant ($p=.006$).

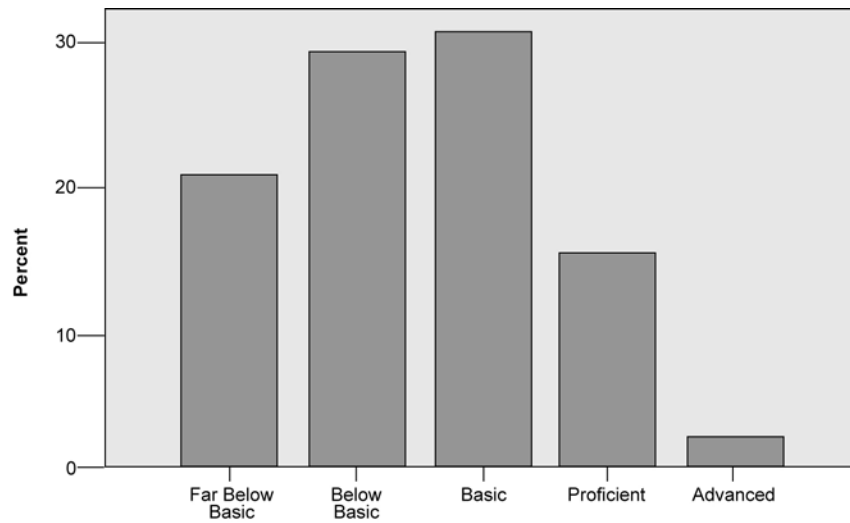
Non-ETC Online Students CST Language Arts Performance Level 2004-05 Frequency Table

| | | Frequency | Valid Percent | Cumulative Percent |
|-------|---|-----------|---------------|-----------------------|
| Valid | 1 | 38 | 21.0 | 21.0 |
| | 2 | 54 | 29.8 | 50.8 |
| | 3 | 57 | 31.5 | 82.3 |
| | 4 | 28 | 15.5 | 97.8 |
| | 5 | 4 | 2.2 | 100.0 |
| Total | | 181 | 100.0 | |

Non-ETC Online Students CST Language Arts Performance Level 2005-06 Frequency Table

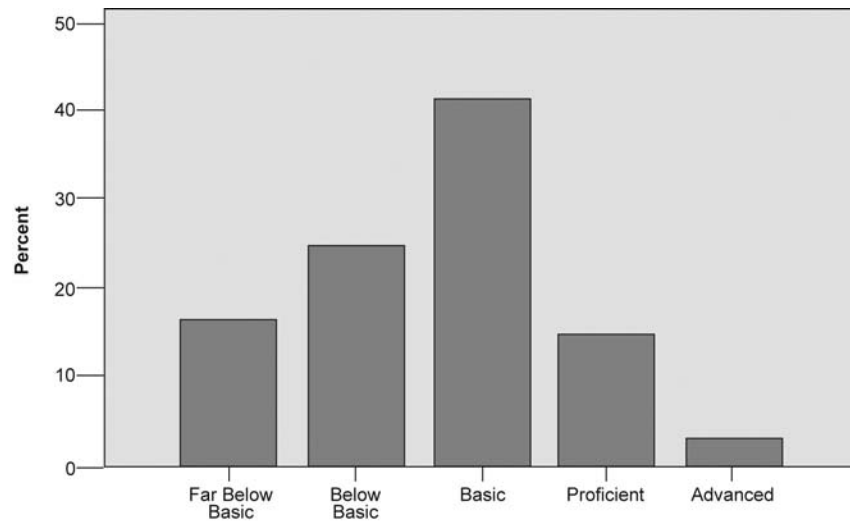
| | | Frequency | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------------|--------------------|
| Valid | 1 | 27 | 14.9 | 14.9 |
| | 2 | 45 | 24.9 | 39.8 |
| | 3 | 75 | 41.4 | 81.2 |
| | 4 | 26 | 14.4 | 95.6 |
| | 5 | 8 | 4.4 | 100.0 |
| | Total | 181 | 100.0 | |

Non-ETC Online Students CST Language Arts Performance Level 2004-05 Frequency Bar Graph



CST Language 04-05

Non-ETC Online Students CST Language Arts Performance Level 2005-06 Frequency Bar Graph



CST Language 05-06

**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 (ETC Online)
– CST Performance Level**

ETC Online 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%.

ETC Online 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 ETC Online students who were Beginning English Learners scored at the far below basic or below basic levels, while in 2005-06, only 37.5% of ETC Online 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 ETC Online Beginning English Learners indicates that the change in performance level was statistically significant ($p < .013$).

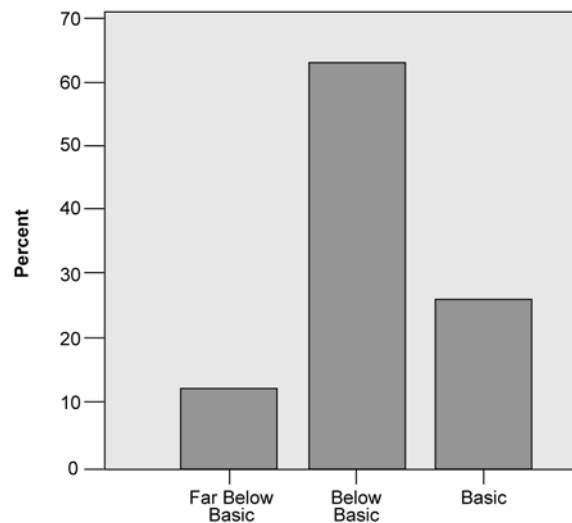
**ETC Online Beginning English Learners CST Language Arts Performance Level 2004-05
Frequency Table**

| | 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 | |

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

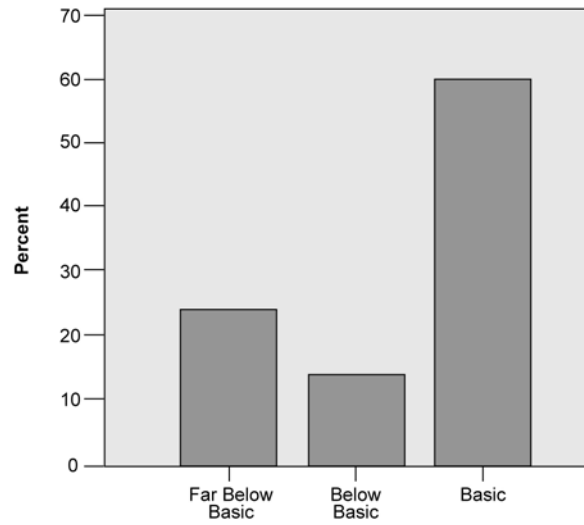
| | Frequency | Valid Percent | Cumulative Percent |
|---------|-----------|---------------|--------------------|
| Valid 1 | 2 | 25.0 | 25.0 |
| 2 | 1 | 12.5 | 37.5 |
| 3 | 5 | 62.5 | 100.0 |
| Total | 8 | 100.0 | |

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



CST Language 04-05

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



CST Language 05-06

**ETC Online 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

| | CST Language Arts Performance Level 2005-06 |
|---------------|--|
| 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-ETC Online) – 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 ETC Online program showed a decline in their average CST Language Arts performance level from 2.63 to 2.46 or 6%.

Non-ETC Online Beginning English Learners CST Performance Level Summary Statistics

| | | CSTLangu age04_05 | CSTLangu age05_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-ETC Online students who were Beginning English Learners scored at the far below basic or below basic levels; again in 2005-06, 45.8% of Non-ETC Online 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-ETC Online students indicates that the decline in performance was not statistically significant.

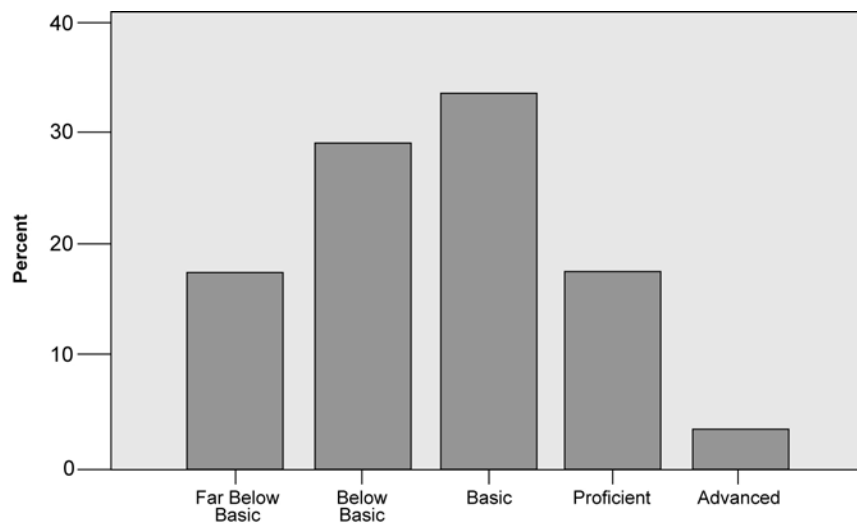
Non-ETC Online Beginning English Learners CST Language Arts Performance Level 2004-05 Frequency Table

| | | 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-ETC Online Beginning English Learners CST Language Arts Performance Level 2005-06
Frequency Table**

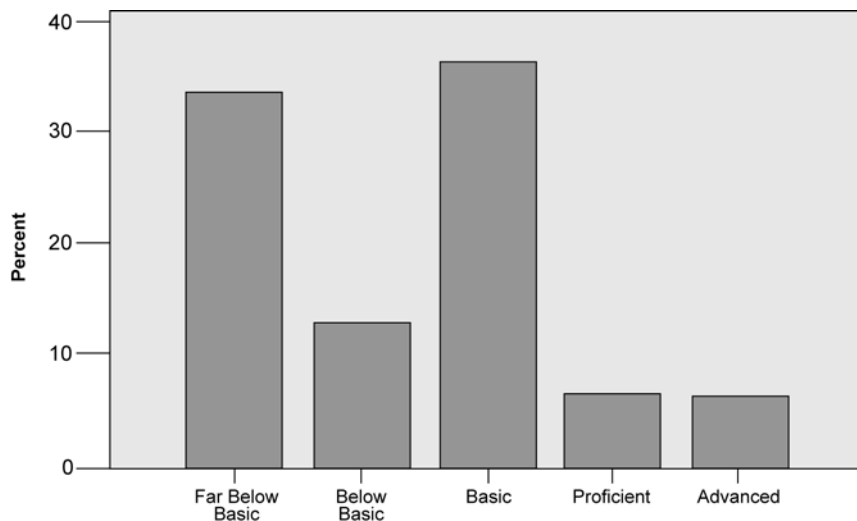
| | Frequency | Valid Percent | Cumulative Percent |
|---------|-----------|---------------|--------------------|
| Valid 1 | 8 | 33.3 | 33.3 |
| 2 | 3 | 12.5 | 45.8 |
| 3 | 9 | 37.5 | 83.3 |
| 4 | 2 | 8.3 | 91.7 |
| 5 | 2 | 8.3 | 100.0 |
| Total | 24 | 100.0 | |

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



CST Language 04-05

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



CST Language 05-06

**Non-ETC Online 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

| | CST Language Arts Performance Level 2005-06 |
|---------------|--|
| 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.

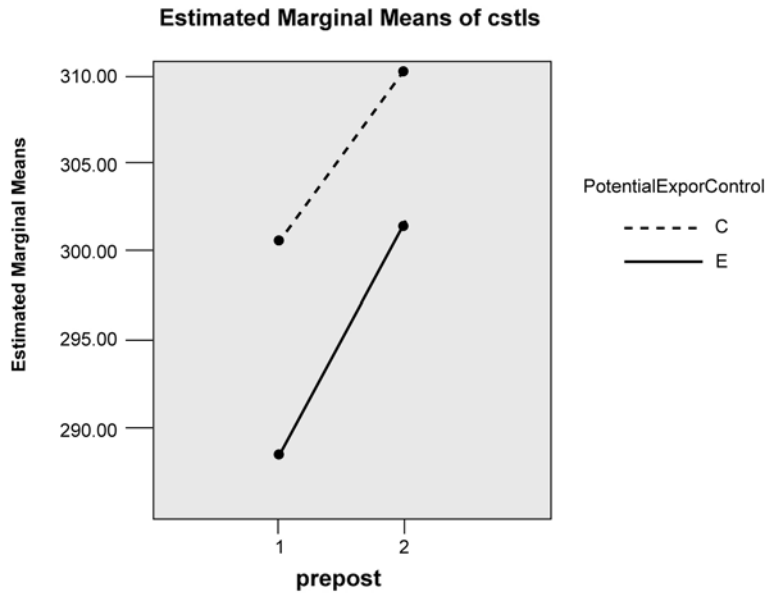
Impact on Participants - CST Scaled Score Performance

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 ($p < .001$). ETC Online 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 ETC Online (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



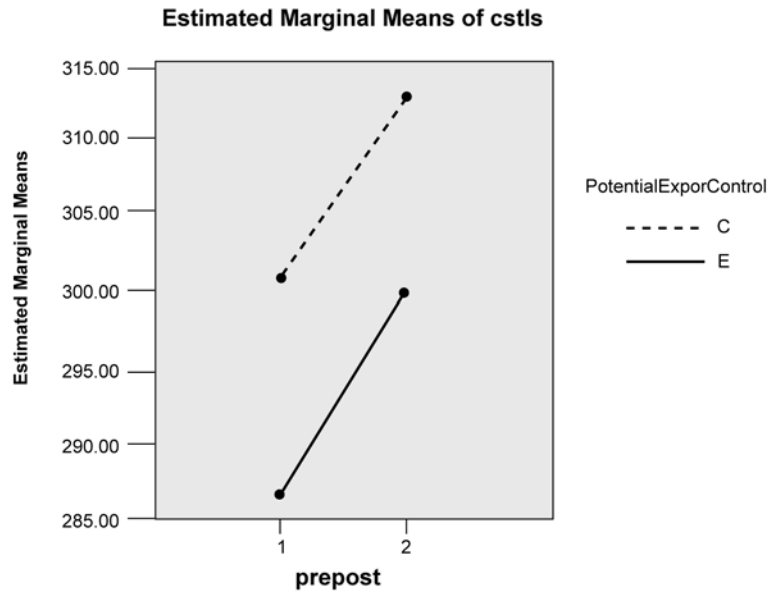
Impact on Participants who met Curricula Goals - CST Scaled Score Performance

Participants in ETC Online had individualized curricula goals based on pre-tests at the beginning of the program. Student goals included completing a minimum number of ETC Online curriculum units. ETC Online 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 ETC Online (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



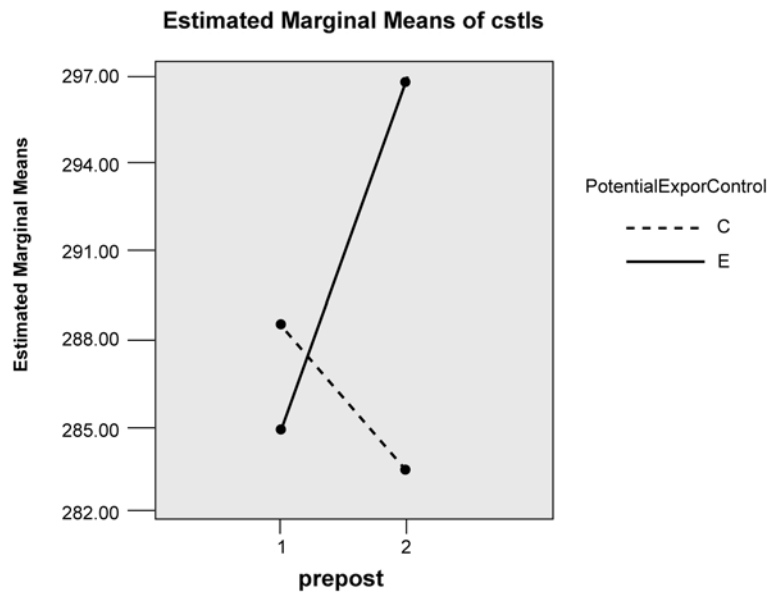
Impact on Beginning English Learners - CST Scaled Score Performance

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 ETC Online (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, ETC Online 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



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 (ETC Online) and control (Non-ETC Online) groups showed improvement. The ETC Online students improved more than the Non-ETC Online 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-ETC Online students) and experimental (ETC Online students) groups showed gains in their CST Language Arts performance levels; however, the ETC Online students show highly statistically significant gains, while the Non-ETC Online students showed statistically significant gains. Non-ETC Online 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-ETC Online students in 2005-06 (39.8%) compared to 2004-05 (50.8%). ETC Online 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. ETC Online students' highly statistically significant gains ($p < .001$) had much greater significance than the gains of the Non-ETC Online students ($p < .01$). This is meaningful since the experimental group (ETC

Online) 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 ETC Online 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 ETC Online 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 ETC Online 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 ETC Online 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 ETC Online participants while the difference was statistically significant for the control group. Beginning English Learners who received the ETC Online 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

ETC Online 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 ETC Online 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. ETC Online conducts computer-aided tutorial sessions after school on school campuses. ETC Online delivers targeted literacy intervention in partnership with local school districts and after-school centers. The program serves primarily disadvantaged and language minority children. ETC Online' 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. ETC Online focuses on one piece of the after-school experience: quality literacy enrichment, which provides a critical academic component for children.

Programming Overview

The ETC Online 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 ETC Online Program served Kindergarten – 4th 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 | Program X (CST Prep Language Arts) CW: Explode the Code |

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 Program X |
| Focus 2 | Program X | Program X | Program X | Program X | 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 ETC Online session.

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