



**San Geronimo Unified School District**  
Schools and Special Programs

2000 - 2004

A Statistical Study of Standardized Test Results

Prepared by EdTech Associates  
Santa Rosa, California

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## Introduction

San Geronimo School District is a California K-12 school district serving 1486 students<sup>1</sup> in 5 schools located in a rural/suburban area of Los Angeles County. The district offers students the choice of entering its Multi-Age-Program, its Dual-Immersion Program, or its Traditional Program.

It is the general purpose of this study to aid the governing board, administrators, and teachers of the San Geronimo School District in planning for the future academic structure of its schools and programs by correctly interpreting the results of the district's past standardized tests. Although standardized test results are not the only measure of school and program performance, such results --- properly interpreted by a competent, un-biased, non-stakeholder --- must at the very least be considered to be one of the best measures of school and program performance.

In fact, this study shall concentrate on grades 3-11 at San Geronimo Elementary School, Washington Intermediate School, and San Geronimo High School.<sup>2</sup> Unless stated specifically in the Endnotes, all data comes from either the Raw STAR results file as provided by the test makers ETS and CTB, or from the summary displays available on-line at the California Department of Education Internet website.

At the inception of the study, administrators asked EdTech Associates three questions:

1. How are our schools performing?
2. How are our three program tracks performing?
3. How are our three program tracks serving our English-Only (EO) students and our English-Learner (EL) students?

The study strives to answer these questions with depth and clarity. To do so, the study begins by formulating eight very specific questions, questions whose answers tell the story of the district's performance in a logical sequence. Using accepted principles of statistics to derive and interpret

results, the study provides specific findings about the performance of the district's schools, demographic groups, and special programs.

This study is presented differently from the way in which studies are often presented in scientific journals. The choice of presentation style is deliberate. When a study is presented to be read by scientists, the order of presentation is:

1. Hypothesis or Broad Statement of Study Inquiry
2. Full Methodology including all data and statistics
3. Observations
4. Conclusions

Although this format is appropriate for scientists to read, laypersons of varying educational levels are poorly served by this format and are often unable to digest the study or even derive the most pertinent information from the study.

This study is deliberately presented in almost the exact opposite order with the intent that readers will be well served no matter what their academic level or time constraints<sup>3</sup>. If the reader wants only to examine the major findings and recommended actions developed by the study --- or has only ten minutes to spend reading the study --- he should go directly to the 2- page section entitled *Major Findings and Recommended Actions*. Should the reader want to read the eight specific questions and the most significant findings for each question --- or should the reader have only 30 minutes to spend --- he should continue on to the section entitled *Specific Questions and All Significant Findings*. To see the eight key questions, all of the assessments interpreted, all data tables and charts, and all findings, the reader should continue on to the section entitled *Questions, Measures, Data, and All Findings*. He may read this section in its entirety if he has several hours, or he may just refer to this section as needed for further explanation of an item from one of the earlier abbreviated sections.

The reader will notice that in all sections, the study does not clutter the text with difficult statistical meanderings. The study provides that elsewhere. For the reader who wants to see the statistical commentary, follow any superscript to the Endnotes.

The study uses certain naming conventions to help prevent tedium. First, the word *School* will usually be omitted at the end of the full proper name of a school. Thus, *San Geronimo Elementary School* will usually be referred to as *San Geronimo Elementary*. In addition, the three programs *Dual-Immersion Program*, *Multi-Age Program*, and *Traditional Program* will usually be referred to as *Dual-Immersion*, *MAP*, and *Traditional*.

## **Major Findings**

1. In 2004 --- in Reading, Language Arts, and Math --- Washington Intermediate and San Geronimo High scored significantly higher than other comparable national and statewide schools. San Geronimo Elementary scored higher than other comparable national and statewide groups, but by a statistically-insignificant margin. (see question 1)
2. Over a period of 5 years ending in 2004, San Geronimo Elementary's Reading and Math scores have decreased significantly in comparison with same-grade<sup>4</sup> California schools. Washington Intermediate's Language and Math scores have decreased significantly in comparison with same-grade California schools. San Geronimo High's Math scores have decreased significantly in comparison with same-grade California schools. (see question 2)
3. In 2004, students in Dual-Immersion, MAP and Traditional scored significantly higher than California averages in Reading, Language and Math. (see question 3)
4. In 2004, MAP, Traditional, and Dual-Immersion programs, when normalized for language fluency distribution<sup>5</sup>, scored significantly higher than the national and California averages in Reading, Language and Math. (see question 5)
5. Normalizing all programs for language fluency distribution, over a period of 5 years ending in 2004 --- in Reading and Language Arts --- Dual-Immersion scores have increased significantly in comparison with both MAP and Traditional scores. (see question 6)
6. Over a period of 5 years ending in 2004 --- in Reading and Language Arts --- Dual-Immersion EO scores have increased significantly in comparison with both MAP EO and Traditional EO scores. (see question 8)
7. Over a period of 5 years ending in 2004 --- in Reading, Language Arts, and Math --- Dual-Immersion EL scores have increased significantly in comparison with both MAP EL and Traditional EL scores. (see question 8)

## Recommended Actions

1. Improve upon relatively low EL performance in Traditional Program.
  - a. Determine if problem is curriculum, delivery of curriculum, or structural.
  - b. Review all current research as to the best way to educate English Learners in a traditional environment. Review all current research as to alternative programs for English Learners.
  - c. Consider expanding Dual-Immersion Program.
  
2. Improve upon declining performance in Mathematics district-wide.
  - a. Determine if problem is curriculum, delivery of curriculum, administrative, or any other identifiable factor.
  - b. Evaluate Math textbooks and all other instructional materials. Check that they are *state-adopted* and/or addressable to California standards.
  - c. Carefully observe and assess the actual teaching of Math across all grades in the district. Compare observations with best practices as specified by professional organizations.
  - d. Consider the services of an external evaluator with specific experience evaluating Mathematics programs.

## **Specific Questions and All Significant Findings**

### **Question 1**

How are the district's schools presently performing in comparison with other schools throughout California and the United States?

- In 2004, Washington Intermediate and San Geronimo High scored significantly higher than other comparable national and statewide schools. San Geronimo Elementary scored higher than other comparable national and statewide groups, but by a statistically-insignificant margin.

### **Question 2**

How are the district's schools performing on a five-year basis in comparison with other schools throughout California and the United States?

- Over a period of 5 years ending in 2004, San Geronimo Elementary's Reading and Math scores have decreased significantly in comparison with same-grade California schools. Washington Intermediate's Language and Math scores have decreased significantly in comparison with same-grade California schools. San Geronimo High's Math scores have decreased significantly in comparison with same-grade California schools.

### **Question 3**

How are the district's Traditional Program, Dual-Immersion Program, and Multi-Age Program presently performing in comparison to each other and in comparison with other students throughout California and the United States?

- In 2004, Dual-Immersion, MAP and Traditional scored significantly higher than California averages in Reading, Language and Math.
- In 2004, in Reading and Math, MAP scored significantly higher than Traditional and Traditional scored significantly higher than Dual-Immersion. In Language, MAP students scored significantly higher than students in both of the other groups<sup>6</sup>.

### **Question 4**

How are the district's Traditional Program, Dual-Immersion Program, and Multi-Age Program performing on a five-year basis in comparison with each other and in comparison with other students throughout California?

- Over a period of 5 years ending in 2004, in Reading and Language Arts, Dual-Immersion scores have increased significantly in comparison with same-grade California schools. In Language Arts, Traditional scores have decreased significantly in comparison with same-grade California schools. In Math, MAP and Traditional scores have decreased significantly in comparison with same-grade California schools.
- Over a period of 5 years ending in 2004, in Reading and Language Arts, Dual-Immersion scores have increased significantly in comparison with both MAP and Traditional.

## Question 5

How are the district's Traditional Program, Dual-Immersion Program, and Multi-Age Program presently performing in comparison with each other and in comparison with other students throughout California and the United States, *when the programs are normalized for differences in language fluency distribution*<sup>7</sup>?

- In 2004, MAP, Traditional, and Dual-Immersion programs, when normalized for language fluency distribution, scored significantly higher than the national and California averages in Reading, Language and Math.
- In 2004, in Reading and Language, MAP scored significantly higher than Traditional and Dual-Immersion when all three programs are normalized for language fluency distribution<sup>8</sup>.

## Question 6

How are the district's Traditional Program, Dual-Immersion Program, and Multi-Age Program performing on a five-year basis in comparison with each other and in comparison with other students throughout California, *when the programs are normalized for differences in language fluency distribution*?

- Normalizing all programs for language fluency distribution, over a period of 5 years ending in 2004, in Reading, Dual-Immersion scores have increased significantly in comparison with same-grade California schools.
- Normalizing all programs for language fluency distribution, over a period of 5 years ending in 2004, in Language Arts, Dual-Immersion scores have increased significantly in comparison with same-grade California schools. Traditional scores have decreased significantly in comparison with same-grade California schools.
- Normalizing all programs for language fluency distribution, over a period of 5 years ending in 2004, in Math, MAP and Traditional scores have decreased significantly in comparison with same-grade California schools.
- Normalizing all programs for language fluency distribution, over a period of 5 years ending in 2004, in Reading and Language Arts, Dual-Immersion scores have increased significantly in comparison with both MAP and Traditional.

## Question 7

How are EO and EL students in the district's Traditional Program, Dual-Immersion Program, and Multi-Age Program presently performing in comparison to similar students throughout all three programs and in comparison to similar students throughout California and the United States? In all of these comparisons, EO students shall be compared with EO students --- and EL students shall be compared with EL students.

- In 2004, EO students in Dual-Immersion, MAP, and Traditional scored significantly higher than the national and California averages in Reading, Language and Math.
- In 2004, MAP EO students scored significantly higher than Traditional students and Dual-Immersion students in Reading and Language<sup>9</sup>.
- In 2004, EL students in Dual-Immersion, MAP, and Traditional programs scored significantly higher than the national and California averages in Reading and Language. MAP EL students scored significantly higher than the national and California averages in Math.
- In 2004, MAP EL students scored significantly higher than Traditional students and Dual-Immersion students in Reading, Language, and Math<sup>10</sup>.

## Question 8

How are EO and EL students in the district's Traditional Program, Dual-Immersion Program, and Multi-Age Program performing on a five-year basis in comparison to similar students throughout all three programs and in comparison to similar students throughout California? In all of these comparisons, EO students shall be compared with EO students --- and EL students shall be compared with EL students.

- Over a period of 5 years ending in 2004, for EO students, in Reading and Language Arts, Dual-Immersion scores have increased significantly in comparison with same-grade students in California schools. EO Traditional scores have decreased significantly in comparison with same-grade students in California schools.
- Over a period of 5 years ending in 2004, for EO students, in Math, MAP and Traditional scores have decreased significantly in comparison with same-grade students in California schools.
- Over a period of 5 years ending in 2004, for EO students, in Reading and Language Arts, Dual-Immersion scores have increased significantly in comparison with both MAP and Traditional scores.
- Over a period of 5 years ending in 2004, for EL students, in Reading and Language Arts, Dual-Immersion scores have increased significantly in comparison with same-grade California schools. Traditional EL scores have decreased significantly in comparison with same-grade California schools.
- Over a period of 5 years ending in 2004, for EL students, in Math, MAP and Traditional scores have decreased significantly in comparison with same-grade California schools.
- Over a period of 5 years ending in 2004, for EL students, in Reading, Language Arts, and Math, Dual-Immersion scores have increased significantly in comparison with both MAP and Traditional scores.

## **Question 1**

How are the district's schools presently performing in comparison with other schools throughout California and the United States?<sup>11</sup>

### **Measures and Data**

There are a wide variety of acceptable measures available to answer the question. Five measures were used. The measures and data are presented immediately after the findings.<sup>12</sup>

### **Question 1 Findings**

From the measures and data presented on the following pages, the study makes the following findings:

- For 2004, on a broad range of measures, San Geronimo Elementary scored higher than other comparable national and statewide groups, but by a statistically-insignificant margin.
- For 2004, on a broad range of measures, Washington Intermediate scored significantly higher than other comparable national and statewide groups.<sup>13</sup>
- For 2004, on a broad range of measures, San Geronimo High scored significantly higher than other comparable national and statewide groups.

**Measure 1.1 Average Student NP Compared to National Average<sup>14</sup>** – This measure compares the average student score on the 2004 CAT/6 to the average student nationwide. The average student nationwide, by definition, has NP=50.

**Data:** See Table 1.1.1

**Findings:**

- San Geronimo Elementary scored higher than the national average in Reading and Language, but by a statistically-insignificant margin. San Geronimo Elementary scored significantly higher than the national average in Math.
- Washington Intermediate scored significantly higher than the national average in Reading, Language and Math.
- San Geronimo High scored significantly higher than the national average in Reading, Language and Math.

**Table 1.1.1**

	Average Reading NP	Average Language NP	Average Math NP
San Geronimo Elementary	52	51	60
Washington Intermediate	54	53	55
San Geronimo High	56	58	60
National Average	50	50	50

**Measure 1.2 Average Student NP Compared to California Average NP for Same Grade Levels** – This measure compares the average student score on the 2004 CAT/6 to the average California student in the same grades as the subject school.

**Data:** See Tables 1.2.1, 1.2.2, 1.2.3

**Findings:**

- San Geronimo Elementary scored significantly higher than the California average in Reading, Language and Math.
- Washington Intermediate scored significantly higher than the California average in Reading, Language and Math.
- San Geronimo High scored significantly higher than the California average in Reading, Language and Math.

**Table 1.2.1**

	Average Reading NP	Average Language NP	Average Math NP
San Geronimo Elementary	52	51	60
California Average	40	43	52

**Table 1.2.2**

	Average Reading NP	Average Language NP	Average Math NP
Washington Intermediate	54	53	55
California Average	43	44	48

**Table 1.2.3**

	Average Reading NP	Average Language NP	Average Math NP
San Geronimo High	56	58	60

California Average	46	46	49
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**Measure 1.3 Percentage of Students Scoring Proficient or Advanced on the 2004 CST –**

This measure compares the percentage of students scoring proficient or advanced on the 2004 CST to the percentage of all California students scoring proficient or advanced in the same grades as the subject school.

**Data:** See Tables 1.3.1, 1.3.2, 1.3.3

**Findings:**

- San Geronimo Elementary scored higher than the California percentage on CST ELA and CST Math, but by a statistically-insignificant margin
- Washington Intermediate scored significantly higher than the California percentage on CST ELA and CST Math.
- San Geronimo High scored significantly higher than the California percentage on CST ELA and CST Math.

**Table 1.3.1**

	Percent Proficient or Advanced	
	CST ELA	CST Math
San Geronimo Elementary	36	45
California Average	35	43

**Table 1.3.2**

	Percent Proficient or Advanced	
	CST ELA	CST Math
Washington Intermediate	45	40
California Average	35	32

**Table 1.3.3**

	Percent Proficient or Advanced	
	CST ELA	CST Math
San Geronimo High	40	31

California Average	35	20
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**Measure 1.4 API Compared to California Average API for Identical School Types** – This measure compares school API to the average California school of the same type (elementary, middle, high) as the subject school.

**Data:** See Tables 1.4.1, 1.4.2, 1.4.3

**Findings:**

- San Geronimo Elementary scored significantly higher than the California average API.
- Washington Intermediate scored significantly higher than the California average API.
- San Geronimo High scored higher than the California average API, but by a statistically-insignificant margin.

**Table 1.4.1**

	API
San Geronimo Elementary	722
California Average	659

**Table 1.4.2**

	API
Washington Intermediate	742
California Average	656

**Table 1.4.3**

	API
San Geronimo High	666
California Average	651

**Measure 1.5 API Compared to 100 Similar Schools** – This measure compares school API to the average API of the 100 schools in California whose *demographic characteristic indexes* are closest to the index of the subject school.

**Data:** See Tables 1.5.1, 1.5.2, 1.5.3

**Findings:**

- San Geronimo Elementary scored significantly lower than the average API of *100 Similar Schools*.
- Washington Intermediate scored lower than the average API of *100 Similar Schools*, but by a statistically-insignificant margin.
- San Geronimo High scored lower than the average API of *100 Similar Schools*, but by a statistically-insignificant margin.

**Table 1.5.1**

	API
San Geronimo Elementary	722
100 Similar Schools	755

**Table 1.5.2**

	API
Washington Intermediate	742
100 Similar Schools	756

**Table 1.5.3**

	API
San Geronimo High	666
100 Similar Schools	678



## **Question 2**

How are the district's schools performing on a five-year basis in comparison with other schools throughout California and the United States?<sup>15</sup>

### **Measures and Data**

Two measures were used to answer this question. The measures and data are presented immediately after the findings.<sup>16</sup>

### **Question 2 Findings**

From the measures and data presented on the following pages, the study makes the following findings:

- Using two measures over a period of 5 years ending in 2004, San Geronimo Elementary's Reading and Math scores have decreased significantly in comparison with same-grade California schools. No statistically-valid statement can be made about the school's Language scores.
- Using two measures over a period of 5 years ending in 2004, Washington Intermediate's Language and Math scores have decreased significantly in comparison with same-grade California schools. Its Reading scores have kept pace with same-grade California schools.
- Using two measures over a period of 5 years ending in 2004, San Geronimo High's Math scores have decreased significantly in comparison with same-grade California schools. No statistically-valid statement can be made about the school's Language and Reading scores.

**Measure 2.1** The change, over time, in the difference between the Average NP of a subject school and the Average NP of all California schools of the same grade level type. For example, if a school has an average Total Reading NP = 61 and the average of all California schools of the same grade level is NP =55, then the difference = +6.

**Data:** See Tables 2.1.1, 2.1.2, 2.1.3 and Charts 2.1.1, 2.1.2, 2.1.3

**Findings:**

- Over a period of 5 years ending in 2004, San Geronimo Elementary's Average Reading NP and Average Math NP have decreased significantly in comparison with same-grade California schools. Its Average Language NP has increased in comparison with same-grade California schools, but by a statistically-insignificant margin.
- Over a period of 5 years ending in 2004, Washington Intermediate's Average Reading NP has remained the same as same-grade California schools. Its Average Language NP and Average Math NP have decreased in comparison with same-grade California schools, but by a statistically-insignificant margin.
- Over a period of 5 years ending in 2004, San Geronimo High's Average Reading NP and Average Math NP have decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. Its Average Language NP has increased in comparison with same-grade California schools, but by a statistically-insignificant margin.

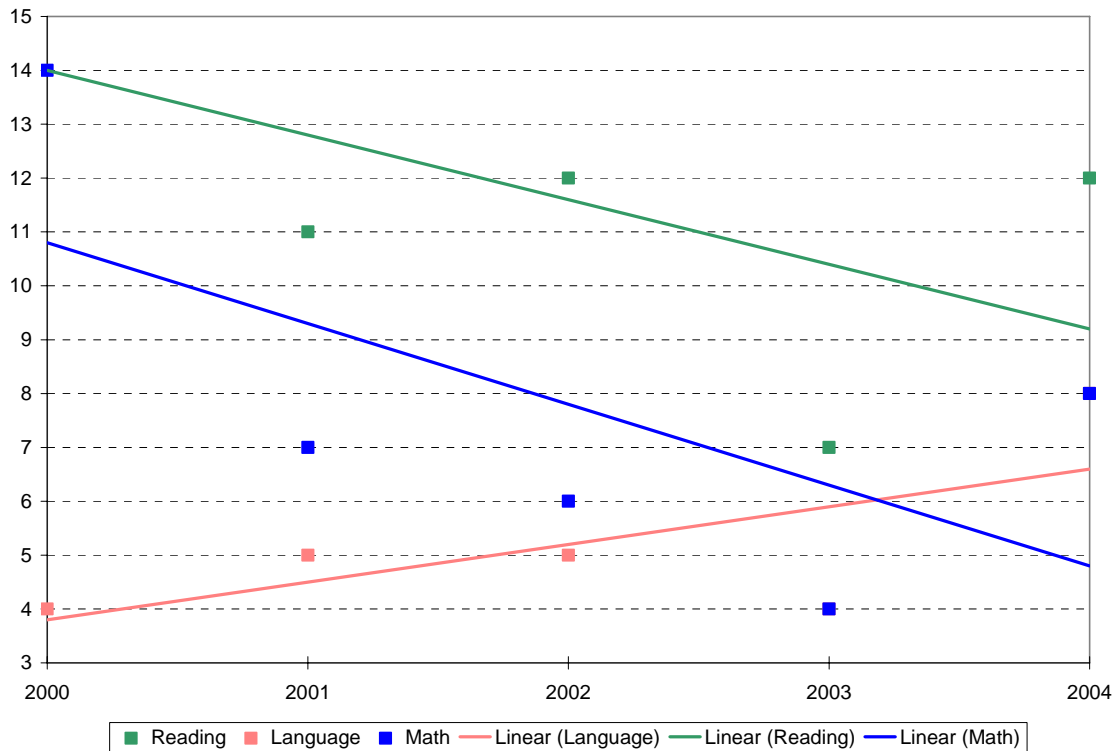
San Geronimo Elementary

**Table 2.1.1**

	Net difference between Subject School Average NP and California Average NP		
	Reading	Language	Math
2000	+16	+4	+14
2001	+11	+5	+7
2002	+12	+5	+6
2003	+7	+4	+4
2004	+12	+8	+8

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 2.1.1**



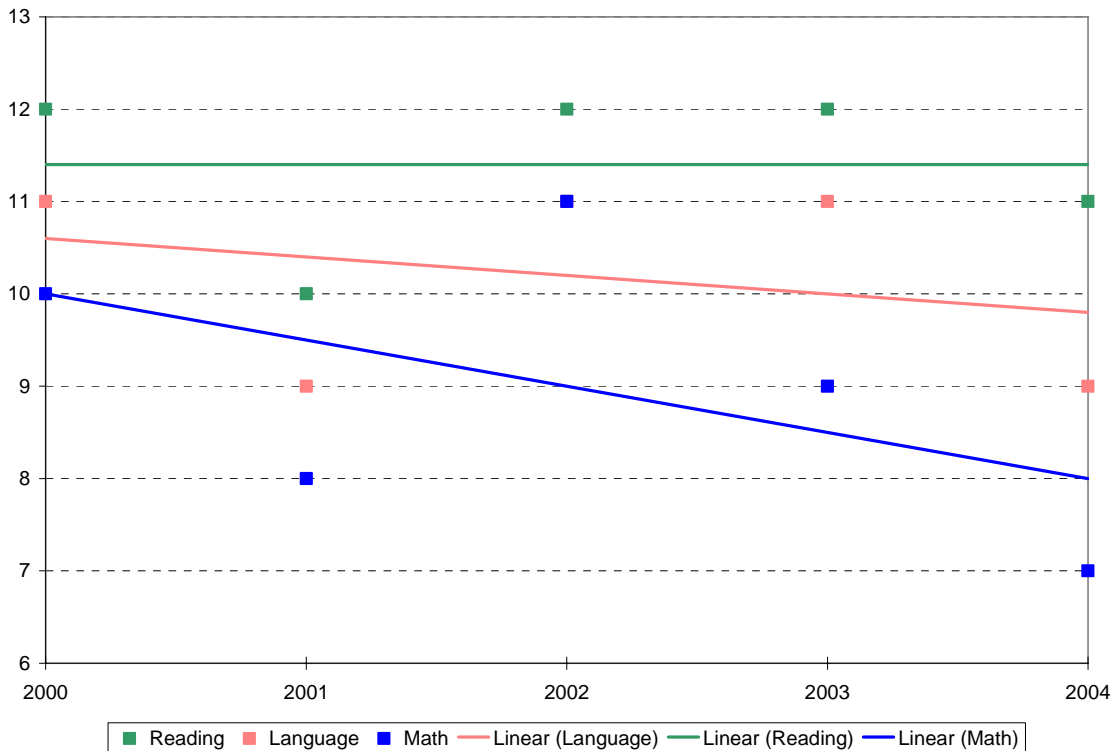
Washington Intermediate

**Table 2.1.2**

	Net difference between Subject School Average NP and California Average NP		
	Reading	Language	Math
2000	+12	+11	+10
2001	+10	+9	+8
2002	+12	+11	+11
2003	+12	+11	+9
2004	+11	+9	+7

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 2.1.2**



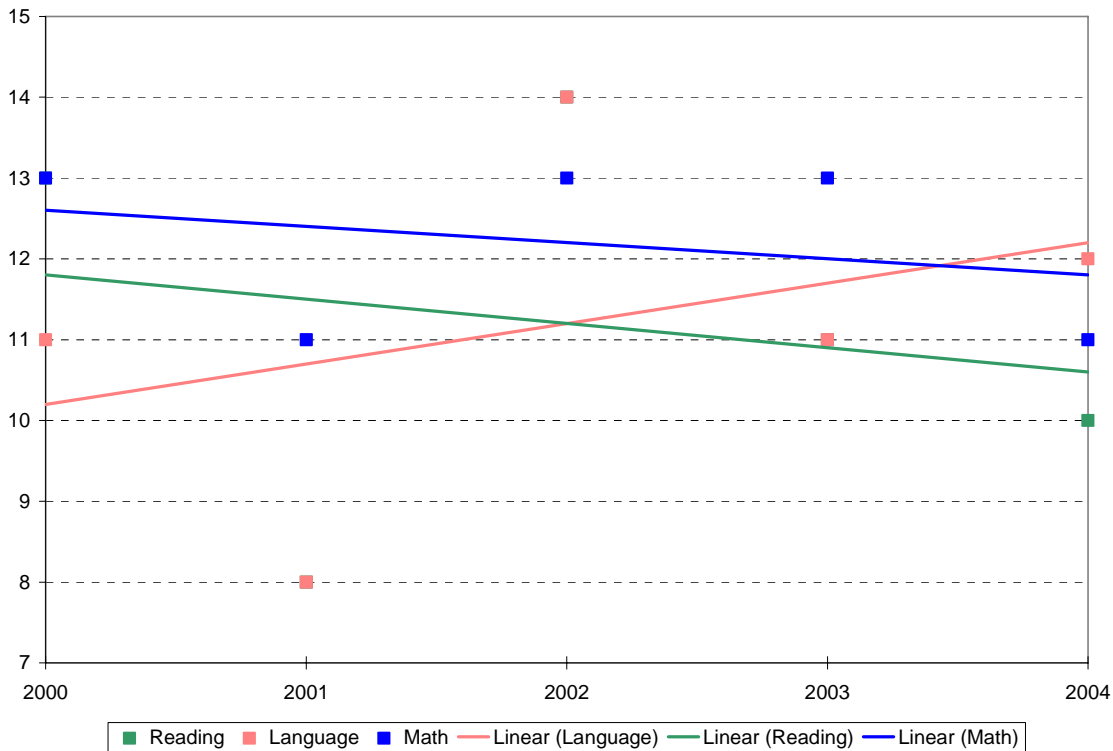
San Geronimo High

**Table 2.1.3**

	Net difference between Subject School Average NP and California Average NP		
	Reading	Language	Math
2000	+13	+11	+13
2001	+8	+8	+11
2002	+14	+14	+13
2003	+11	+11	+13
2004	+10	+12	+11

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 2.1.3**



**Measure 2.2** The change, over time, in the difference between the CST Proficiency percentage of a subject school and the CST Proficiency percentage of all California schools of the same grade level type. For example, if a school has (Percentage of Students Scoring Advanced or Proficient on CST ELA) = 22, and all California schools of the same grade level have (Percentage of Students Scoring Advanced or Proficient on CST ELA) = 24, then the difference = -2.

**Data:** See Tables 2.2.1, 2.2.2, 2.2.3 and Charts 2.2.1, 2.2.2, 2.2.3

**Findings:**

- Over a period of 4 years, San Geronimo Elementary's CST ELA and CST Math<sup>17</sup> Proficiency percentages have decreased significantly in comparison with same-grade California schools.
- Over a period of 4 years, Washington Intermediate's CST ELA and CST Math Proficiency Percentages have decreased significantly in comparison with same-grade California schools.
- Over a period of 4 years, San Geronimo High's CST ELA and CST Math Proficiency Percentages have decreased significantly in comparison with same-grade California schools.

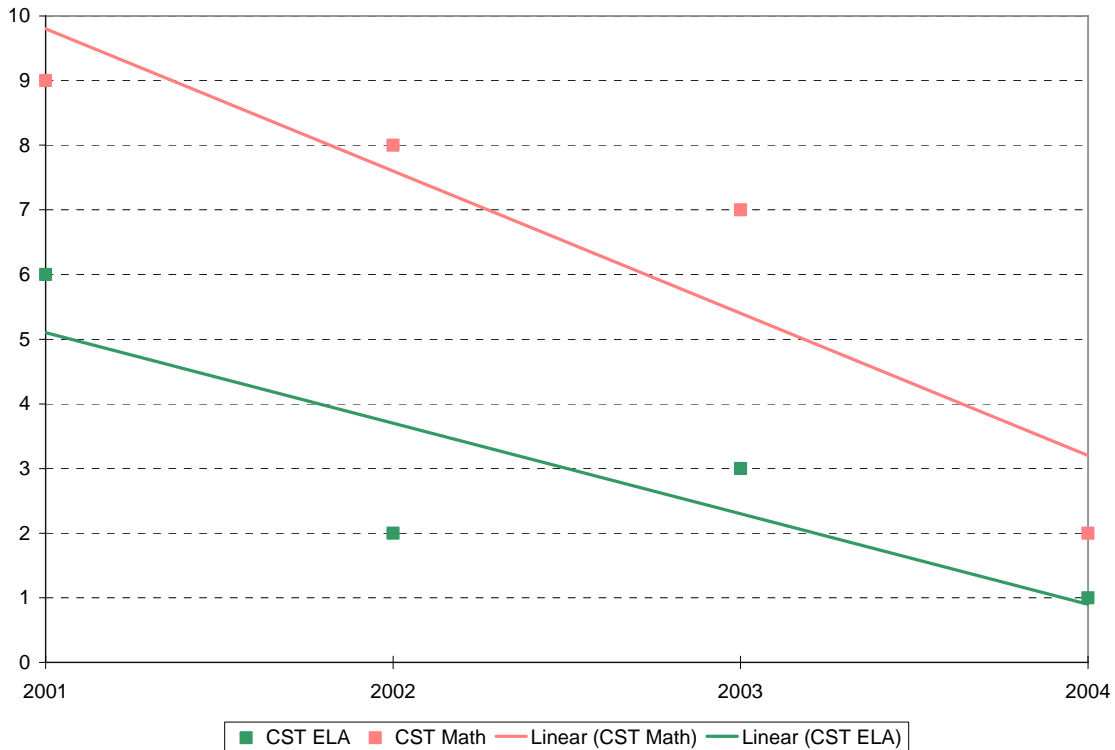
San Geronimo Elementary

**Table 2.2.1**

	Net difference between Subject School CST Proficiency and California CST Proficiency	
	CST ELA	CST Math
2001	+6	+9
2002	+2	+8
2003	+3	+7
2004	+1	+2

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 2.2.1**



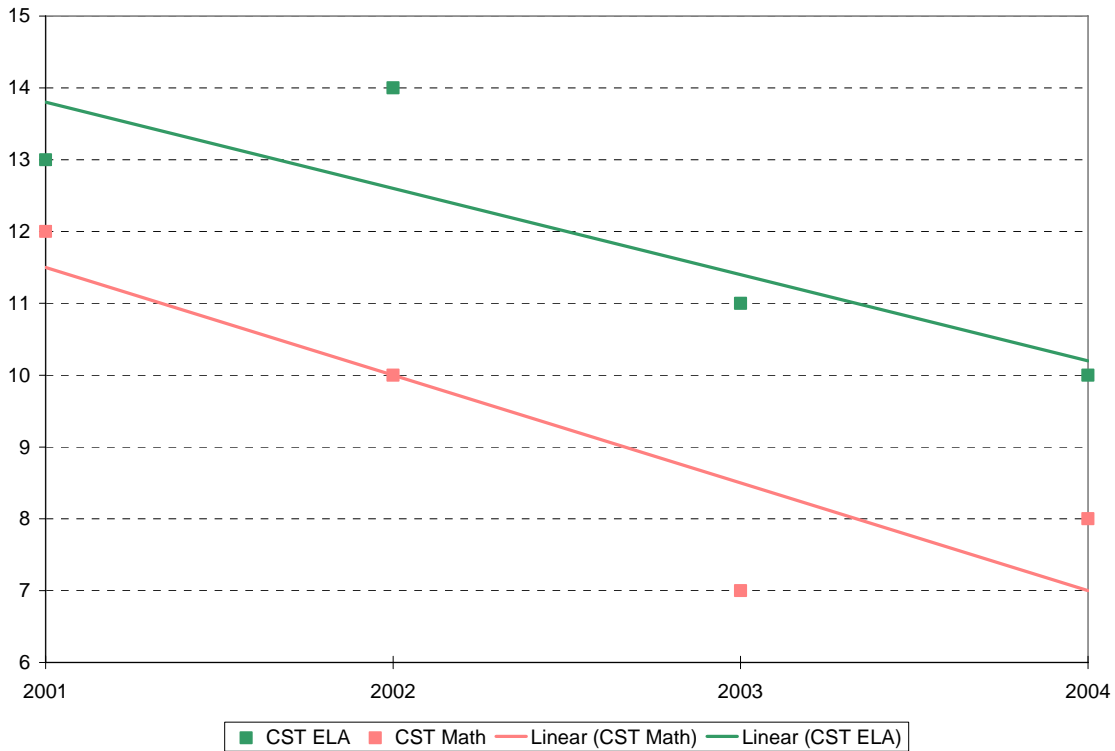
Washington Intermediate

**Table 2.2.2**

	Net difference between Subject School CST Proficiency and California CST Proficiency	
	CST ELA	CST Math
2001	+13	+12
2002	+14	+10
2003	+11	+7
2004	+10	+8

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 2.2.2**



San Geronimo High

**Table 2.2.3**

	Net difference between Subject School CST Proficiency and California CST Proficiency	
	CST ELA	CST Math
2001	+11	+23
2002	+24	+15
2003	+31	+19
2004	+5	+9

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 2.2.3**



### **Question 3**

How are the district's Traditional Program, Dual-Immersion Program, and Multi-Age Program presently performing in comparison with each other and in comparison with other students throughout California and the United States<sup>18</sup>?

### **Measures and Data**

For continuity, the analysis uses the first three measures that were used to answer *Question 1*.<sup>19</sup> The measures and data are presented immediately after the findings.

### **Question 3 Findings**

From the measures and data presented on the following pages, the study makes the following findings:

- For 2004, on a broad range of measures, students in MAP and Traditional scored significantly higher than the national and California averages in Reading, Language and Math.
- For 2004, on a broad range of measures, Dual Immersion scored significantly higher than the California average in Reading, Language and Math. As compared with national averages, Dual-Immersion scored lower in Reading and Language and higher in Math, but all were by statistically-insignificant margins.
- For 2004, in Reading and Math, MAP scored significantly higher than Traditional; Traditional scored significantly higher than Dual-Immersion.
- For 2004, in Language, MAP scored significantly higher than both Traditional and Dual-Immersion.

**Measure 3.1 Average Student NP Compared to National Average** – This measure compares the average student score on the 2004 CAT/6<sup>20</sup> to the average student nationwide. The average student nationwide, by definition, has NP=50.

**Data:** See Table 3.1.1

**Findings:**

- Students in Dual-Immersion scored significantly lower than the national average in Reading. Students in Dual-Immersion scored lower than the national average in Language, but by a statistically-insignificant margin. Students in Dual-Immersion scored higher than the national average in Math, but by a statistically-insignificant margin.
- Students in MAP scored significantly higher than the national average in Reading, Language and Math.
- Students in Traditional scored significantly higher than the national average in Reading, Language and Math.
- Students in MAP scored significantly higher than students in both other programs in Reading and Language; Students in Traditional scored significantly higher than students in Dual-Immersion in Reading and Language.
- Students in the both MAP and Traditional scored significantly higher than students in Dual-Immersion in Math.

**Table 3.1.1**

	Average Reading NP	Average Language NP	Average Math NP
Dual-Immersion	47	48	52
MAP	64	68	61
Traditional	57	57	59
National Average	50	50	50

**Measure 3.2 Average Student NP Compared to California Average NP for Same Grade Levels** – This measure compares the average student score on the 2004 CAT/6 to the average California student in the same grades as the subject program.

**Data:** See Table 3.2.1

**Findings:**

- Students in Dual-Immersion scored significantly higher than the California average in Reading and Language. Students in Dual-Immersion scored higher than the California average in Math, but by a statistically-insignificant margin.
- Students in MAP scored significantly higher than the California average in Reading, Language and Math.
- Students in Traditional scored significantly higher than the California average in Reading, Language and Math.
- Students in MAP scored significantly higher than students in both other programs in Reading and Language.
- Students in Traditional scored significantly higher than students in Dual-Immersion in Reading and Language.
- Students in the both MAP and Traditional scored significantly higher than students in Dual-Immersion in Math.

**Table 3.2.1**

	Average Reading NP	Average Language NP	Average Math NP
Dual-Immersion	47	48	52
MAP	64	68	61
Traditional	57	57	59
California Average	44	45	51

**Measure 3.3 Percentage of Students Scoring Proficient or Advanced on the 2004 CST –**

This measure compares the percentage of students scoring proficient or advanced on the 2004 CST to the percentage of all California students scoring proficient or advanced in the same grades as the subject program.

**Data:** See Table 3.3.1

**Findings:**

- Students in all three programs scored significantly higher than the California average percentage in CST ELA and CST Math.
- Students in MAP scored significantly higher than students in both other programs in CST ELA and CST Math.
- Students in Traditional scored higher than students in Dual-Immersion in CST Math, but by a statistically-insignificant margin.

**Table 3.3.1**

	Percent Proficient or Advanced	
	CST ELA	CST Math
Dual-Immersion	40	37
MAP	60	42
Traditional	40	39
California Average	35	32

## **Question 4**

How are the district's Traditional Program, Dual-Immersion Program, and Multi-Age Program performing on a five-year basis in comparison with each other and in comparison with other students throughout California?<sup>21</sup>

### **Measures and Data**

Two measures were used to answer this question. For continuity, the measures are the same as were used for *Question 2*. The measures and data are presented immediately after the findings.

### **Question 4 Findings**

From the measures and data presented on the following pages, the study makes the following findings:

- In Reading, using two measures over a period of 5 years ending in 2004, Dual-Immersion scores have increased significantly in comparison with same-grade California schools. Traditional scores have decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. MAP scores have kept pace in comparison with same-grade California schools.
- In Language Arts, using two measures over a period of 5 years ending in 2004, Dual-Immersion scores have increased significantly in comparison with same-grade California schools. Traditional scores have decreased significantly in comparison with same-grade California schools. MAP scores have kept pace in comparison with same-grade California schools.

- In Math, using two measures over a period of 5 years ending in 2004, MAP and Traditional scores have decreased significantly in comparison with same-grade California schools. Dual-Immersion scores have decreased in comparison with same-grade California schools, but by a statistically-insignificant margin.
- In Reading and Language Arts, over a period of 5 years ending in 2004, Dual-Immersion scores have increased significantly in comparison with both MAP and Traditional. MAP scores have increased in comparison with Traditional, but by a statistically-insignificant margin.
- In Math, over a period of 5 years ending in 2004, the 3 programs have performed statistically the same.

**Measure 4.1** The change, over time, in the difference between the Average NP of a subject program and the Average NP of all California schools of the same grade level. For example, if a program has an average Total Reading NP = 61 and the average of all California schools of the same grade level is NP =55, then the difference = +6.

**Data:** See Tables 4.1.1, 4.1.2, 4.1.3 and Charts 4.1.1, 4.1.2, 4.1.3

**Findings:**

- In Reading, over a period of 5 years ending in 2004, MAP Average Reading NP has decreased significantly in comparison with same-grade California schools. Traditional Average Reading NP has decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. Dual-Immersion Average Reading NP has increased significantly in comparison with same-grade California schools.
- In Language, over a period of 5 years ending in 2004, MAP and Traditional Average Language NP have decreased significantly in comparison with same-grade California schools. Dual-Immersion Average Language NP has increased significantly in comparison with same-grade California schools.
- In Math, over a period of 5 years ending in 2004, MAP, Dual-Immersion and Traditional Average Math NP have decreased significantly in comparison with same-grade California schools.
- In Reading, over a period of 5 years ending in 2004, Dual-Immersion Average Reading NP has increased significantly in comparison with both MAP and Traditional. Traditional Average Reading NP has increased significantly in comparison with MAP.
- In Language, over a period of 5 years ending in 2004, Dual-Immersion Average Language NP has increased significantly in comparison with both MAP and Traditional Program.

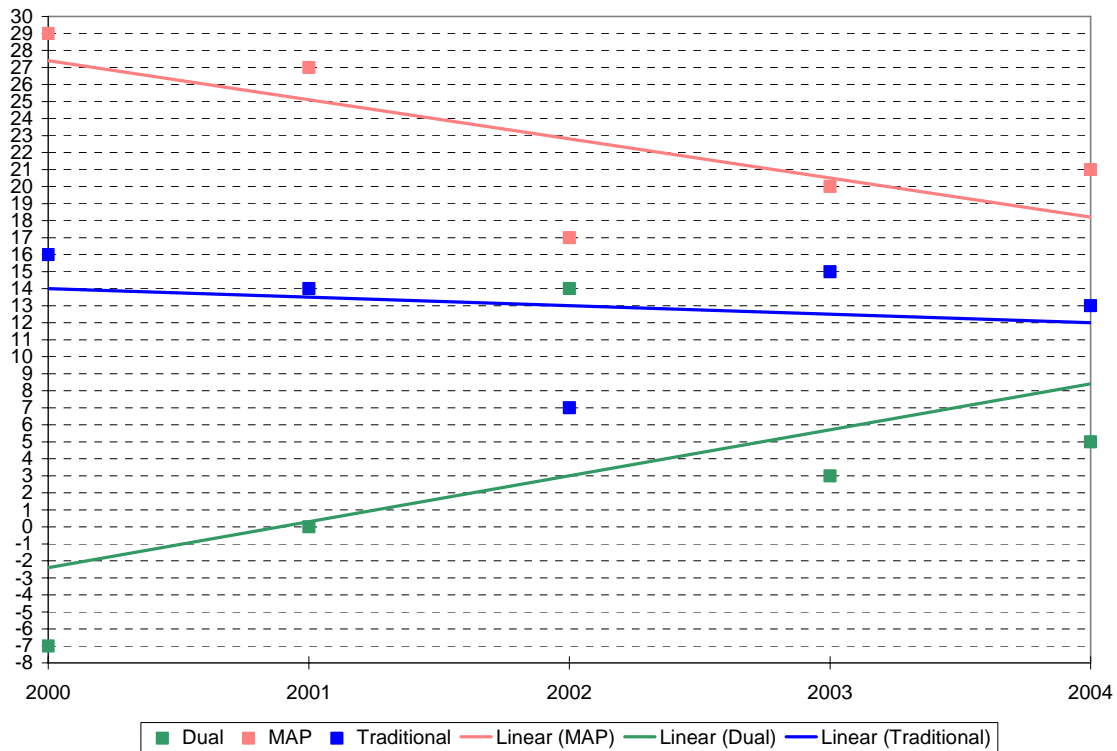
Reading NP

**Table 4.1.1**

	Net difference between Subject Program Average NP and California Average NP		
	Dual	MAP	Traditional
2000	-7	+29	+16
2001	0	+27	+14
2002	+14	+17	+7
2003	+3	+20	+15
2004	+5	+21	+13

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 4.1.1**



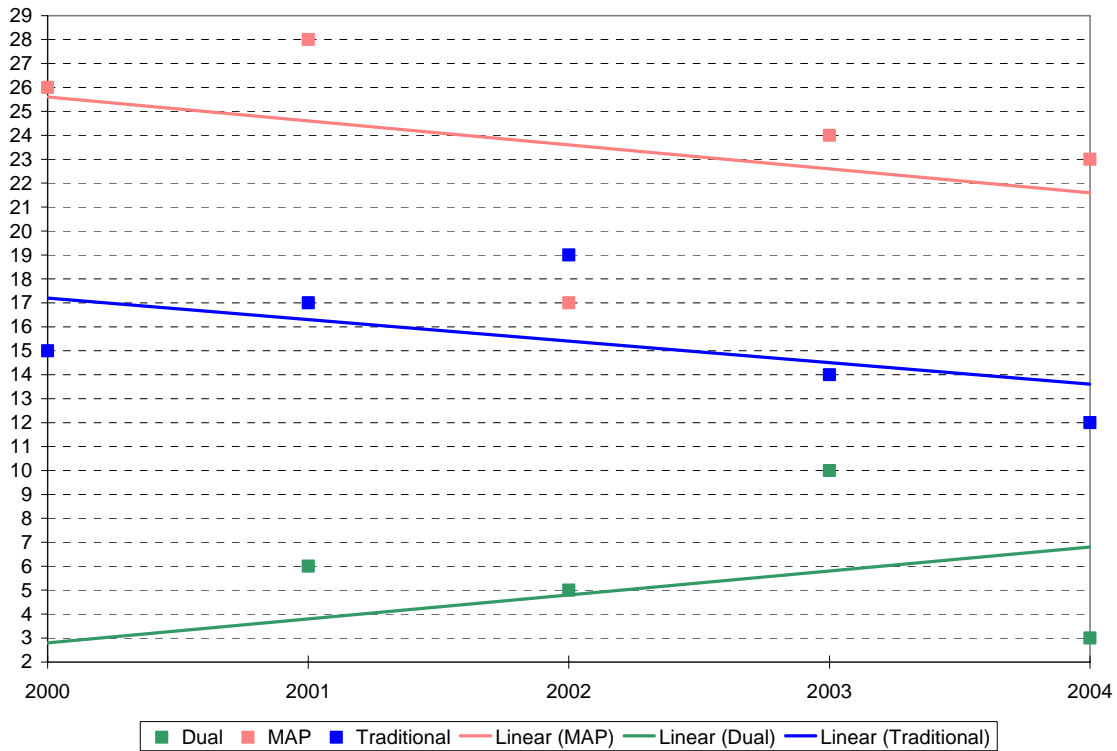
Language NP

**Table 4.1.2**

	Net difference between Subject Program Average NP and California Average NP		
	Dual	MAP	Traditional
2000	0	+26	+15
2001	+6	+28	+17
2002	+5	+17	+19
2003	+10	+24	+14
2004	+3	+23	+12

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 4.1.2**



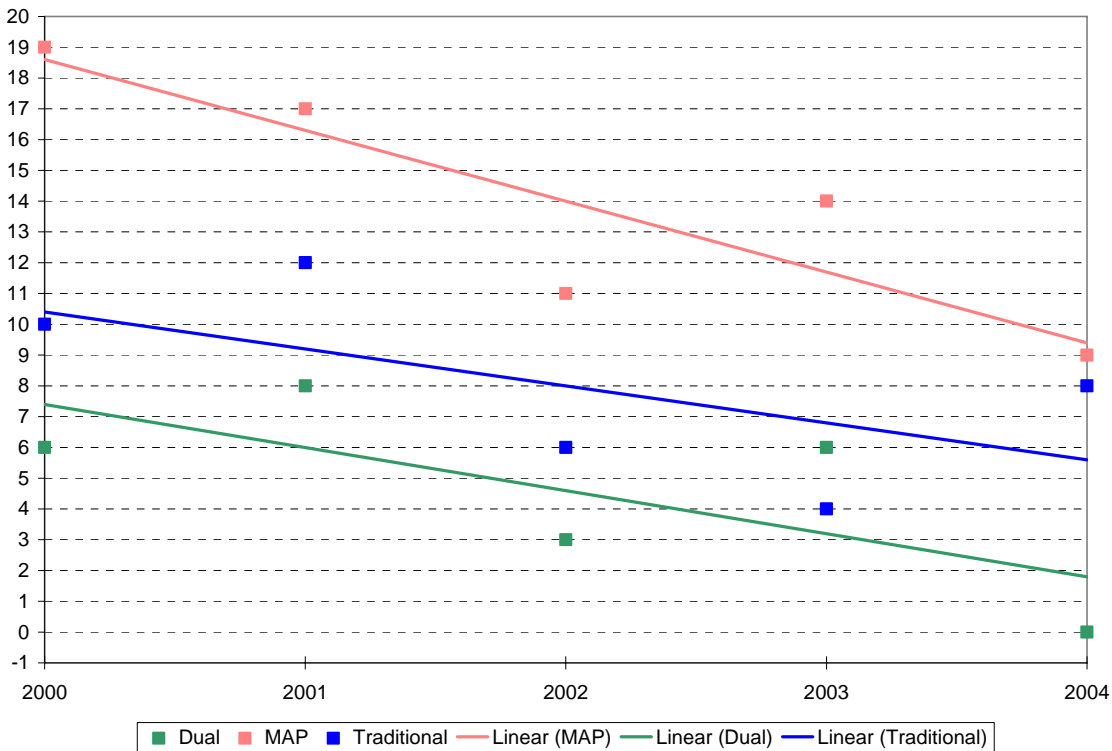
Math NP

**Table 4.1.3**

	Net difference between Subject Program Average NP and California Average NP		
	Dual	MAP	Traditional
2000	+6	+19	+10
2001	+8	+17	+12
2002	+3	+11	+6
2003	+6	+14	+4
2004	0	+9	+8

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 4.1.3**



**Measure 4.2** The change, over time, in the difference between the CST Proficiency percentage of a subject program and the CST Proficiency percentage of all California schools of the same grade level. For example, if a program has (Percentage of Students Scoring Advanced or Proficient on CST ELA) = 22, and all California schools of the same grade level have (Percentage of Students Scoring Advanced or Proficient on CST ELA) = 24, then the difference = -2.

**Data:** See Tables 4.2.1, 4.2.2 and Charts 4.2.1, 4.2.2

**Findings:**

- In CST ELA, over a period of 4 years ending in 2004, MAP and Dual-Immersion Proficiency percentages have increased significantly in comparison with same-grade California schools. Traditional Proficiency percentages have decreased significantly in comparison with same-grade California schools.
- In CST Math, over a period of 4 years ending in 2004, MAP and Traditional Proficiency percentages have decreased significantly in comparison with same-grade California schools. Dual-Immersion Proficiency percentages have increased in comparison with same-grade California schools, but by a statistically-insignificant margin.
- In CST ELA, over a period of 4 years ending in 2004, MAP and Dual-Immersion Proficiency percentages have increased significantly in comparison with Traditional.
- In CST Math, over a period of 4 years ending in 2004, Dual-Immersion Proficiency percentages have increased significantly in comparison with MAP and Traditional.

CST ELA

**Table 4.2.1**

	Net difference between Subject Program CST Proficiency and California CST Proficiency		
	Dual	MAP	Traditional
2001	-2	+20	+13
2002	0	+19	+12
2003	+3	+18	+6
2004	+5	+25	+5

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 4.2.1**



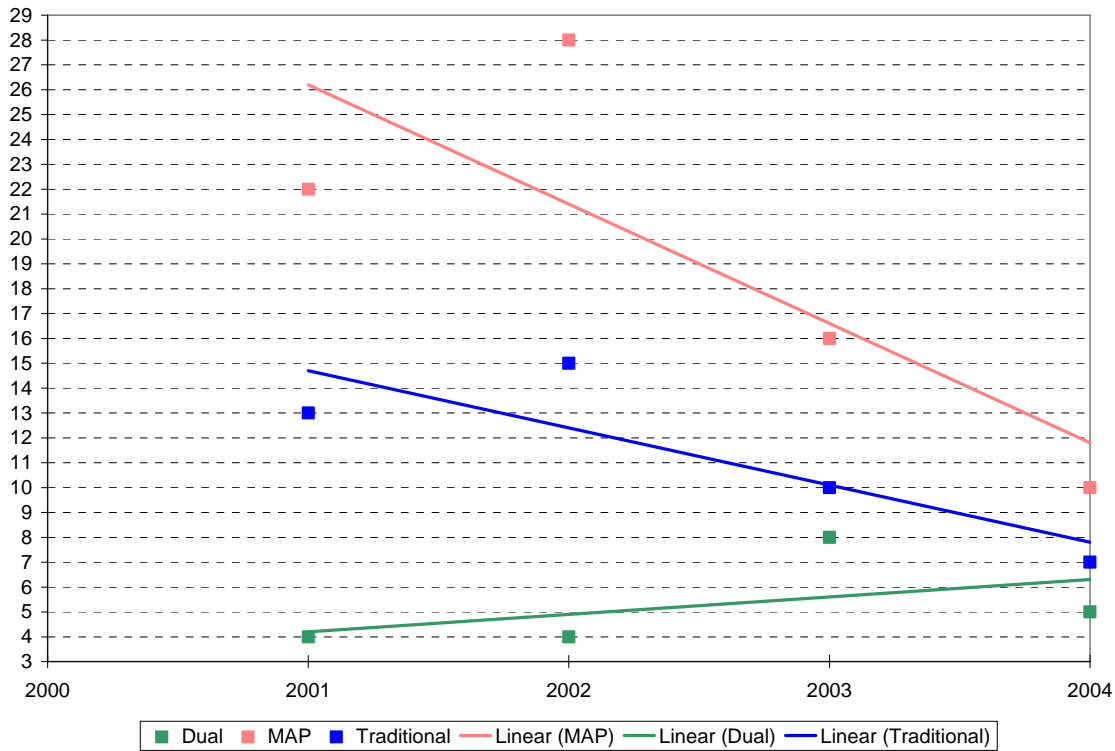
CST Math

**Table 4.2.2**

	Net difference between Subject Program CST Proficiency and California CST Proficiency		
	Dual	MAP	Traditional
2001	+4	+22	+13
2002	+4	+28	+15
2003	+8	+16	+10
2004	+5	+10	+7

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 4.2.2**



## **Question 5**

How are the district’s Traditional Program, Dual-Immersion Program, and Multi-Age Program presently performing in comparison to each other and in comparison with other students throughout California and the United States, *when the programs are normalized for differences in language fluency distribution?*

### **Measures and Data**

For continuity, the analysis uses the same measures that were used to answer *Question 3*. The measures and data are presented immediately after the findings.

### **Question 5 Findings**

From the measures and data presented on the following pages, the study makes the following findings:

- On a broad range of measures, students in all 3 programs scored significantly higher than the national and California averages in Reading, Language and Math.
- On a broad range of measures, in Reading and Language, MAP students scored significantly higher than Traditional students and Dual-Immersion students.<sup>22</sup>
- On a broad range of measures, in Math, all 3 programs scored statistically the same.

**Measure 5.1 Average Normalized Student NP Compared to National Average<sup>23</sup>** – This measure compares the average student score on the 2004 CAT/6 to the average student nationwide. The average student nationwide, by definition, has NP=50.

**Data:** See Table 5.1.1

**Findings:**

- Students in all 3 programs scored significantly higher than the national average in Reading, Language and Math.
- Students in MAP scored significantly higher than students in both other programs in Reading and Language.
- Students in the both MAP and Traditional scored significantly higher than students in Dual-Immersion in Math.

**Table 5.1.1**

	Average Reading NP	Average Language NP	Average Math NP
Dual-Immersion	55	54	54
MAP	64	67	61
Traditional	57	56	59
National Average	50	50	50

**Measure 5.2 Average Normalized Student NP Compared to California Average NP for Same Grade Levels<sup>24</sup>** – This measure compares the average student score on the 2004 CAT/6 to the average California student in the same grades as the subject program.

**Data:** See Table 5.2.1

**Findings:**

- Students in all 3 programs scored significantly higher than the California average in Reading, Language and Math.
- Students in MAP scored significantly higher than students in both other programs in Reading and Language.<sup>25</sup>
- Students in both MAP and Traditional scored significantly higher than students in Dual-Immersion in Math.

**Table 5.2.1**

	Average Reading NP	Average Language NP	Average Math NP
Dual-Immersion	56	55	54
MAP	64	67	61
Traditional	57	57	59
California Average	44	45	51

**Measure 5.3 Normalized Percentage of Students Scoring Proficient or Advanced on the 2004 CST** – This measure compares the percentage of students scoring proficient or advanced on the 2004 CST to the percentage of all California students scoring proficient or advanced in the same grades as the subject program.

**Data:** See Table 5.3.1

**Findings:**

- Students in all three programs scored significantly higher than the California average percentage in CST ELA and CST Math.
- Students in all 3 programs scored statistically-equal in CST Math.
- In CST ELA, students in MAP scored significantly higher than students in Dual-Immersion. Students in Dual-Immersion scored significantly higher than students in the Traditional Program.

**Table 5.3.1**

	Percent Proficient or Advanced	
	CST ELA	CST Math
Dual-Immersion	46	40
MAP	57	41
Traditional	43	41
California Average	35	32

## **Question 6**

How are the district's Traditional Program, Dual-Immersion Program, and Multi-Age Program performing on a five-year basis in comparison with each other and in comparison with other students throughout California, *when the programs are normalized for differences in language fluency distribution?*

### **Measures and Data**

Two measures were used to answer this question. For continuity, the measures are the same as were used for *Question 2* and *Question 4*. The measures and data are presented immediately after the findings.

### **Question 6 Findings**

From the measures and data presented on the following pages, the study makes the following findings:

- In Reading, using two measures over a period of 5 years ending in 2004, Dual-Immersion scores have increased significantly in comparison with same-grade California schools. Traditional scores have decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. MAP scores have kept pace in comparison with same-grade California schools.
- In Language Arts, using two measures over a period of 5 years ending in 2004, Dual-Immersion scores have increased significantly in comparison with same-grade California schools. Traditional scores have decreased significantly in comparison with same-grade California schools. MAP scores have kept pace in comparison with same-grade California schools.

- In Math, using two measures over a period of 5 years ending in 2004, MAP and Traditional Program scores have decreased significantly in comparison with same-grade California schools. Dual-Immersion scores have decreased in comparison with same-grade California schools, but by a statistically-insignificant margin.
- In Reading and Language Arts, over a period of 5 years ending in 2004, Dual-Immersion scores have increased significantly in comparison with both MAP and Traditional. MAP scores have increased in comparison with Traditional, but by a statistically-insignificant margin.
- In Math, over a period of 5 years ending in 2004, the 3 programs have performed statistically the same.

**Measure 6.1** The change, over time, in the difference between the Normalized Average NP of a subject program and the Average NP of all California schools of the same grade level. For example, if a program has an average Total Reading NP = 61 and the average of all California schools of the same grade level is NP =55, then the difference = +6.

**Data:** See Tables 6.1.1, 6.1.2, 6.1.3 and Charts 6.1.1, 6.1.2, 6.1.3

**Findings:**

- In Reading, over a period of 5 years ending in 2004, MAP Average Reading NP has decreased significantly in comparison with same-grade California schools. Traditional Average Reading NP has decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. Dual-Immersion Average Reading NP has increased significantly in comparison with same-grade California schools.
- In Language, over a period of 5 years ending in 2004, MAP and Traditional Average Language NP have decreased significantly in comparison with same-grade California schools. Dual-Immersion Average Language NP has increased significantly in comparison with same-grade California schools.
- In Math, over a period of 5 years ending in 2004, MAP, Dual-Immersion and Traditional Average Math NP have decreased significantly in comparison with same-grade California schools.
- In Reading, over a period of 5 years ending in 2004, Dual-Immersion Average Reading NP has increased significantly in comparison with both MAP and Traditional. Traditional Program Average Reading NP has increased significantly in comparison with MAP.
- In Language, over a period of 5 years ending in 2004, Dual-Immersion Average Language NP has increased significantly in comparison with both MAP and Traditional.

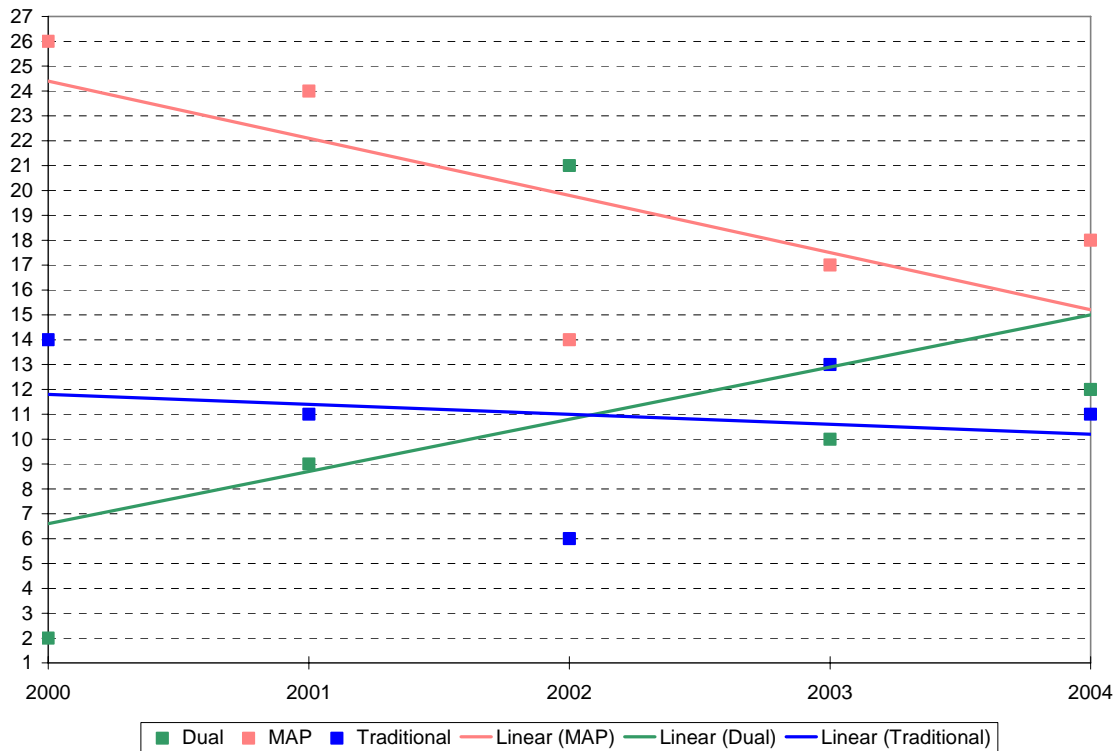
Reading NP

**Table 6.1.1**

	Net difference between Subject Program Average NP and California Average NP		
	Dual	MAP	Traditional
2000	+2	+26	+14
2001	+9	+24	+11
2002	+21	+14	+6
2003	+10	+17	+13
2004	+12	+18	+11

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 6.1.1**



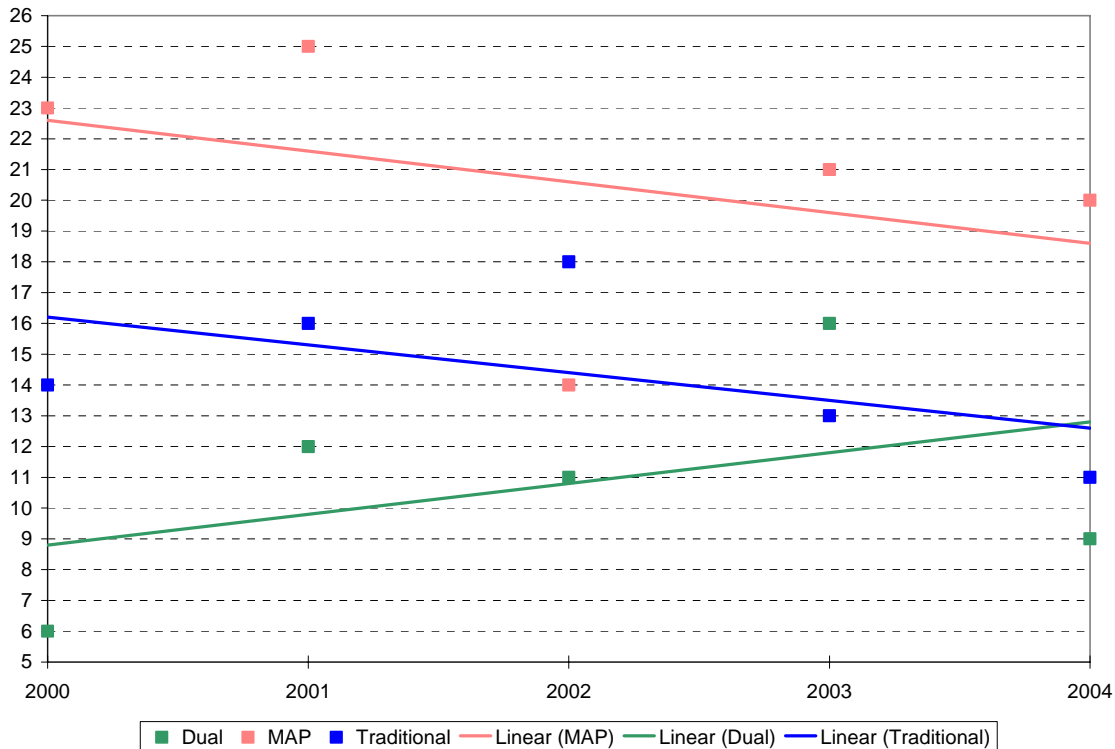
Language NP

**Table 6.1.2**

Net difference between Subject Program Average NP and California Average NP			
	Dual	MAP	Traditional
2000	+6	+23	+14
2001	+12	+25	+16
2002	+11	+14	+18
2003	+16	+21	+13
2004	+9	+20	+11

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 6.1.2**



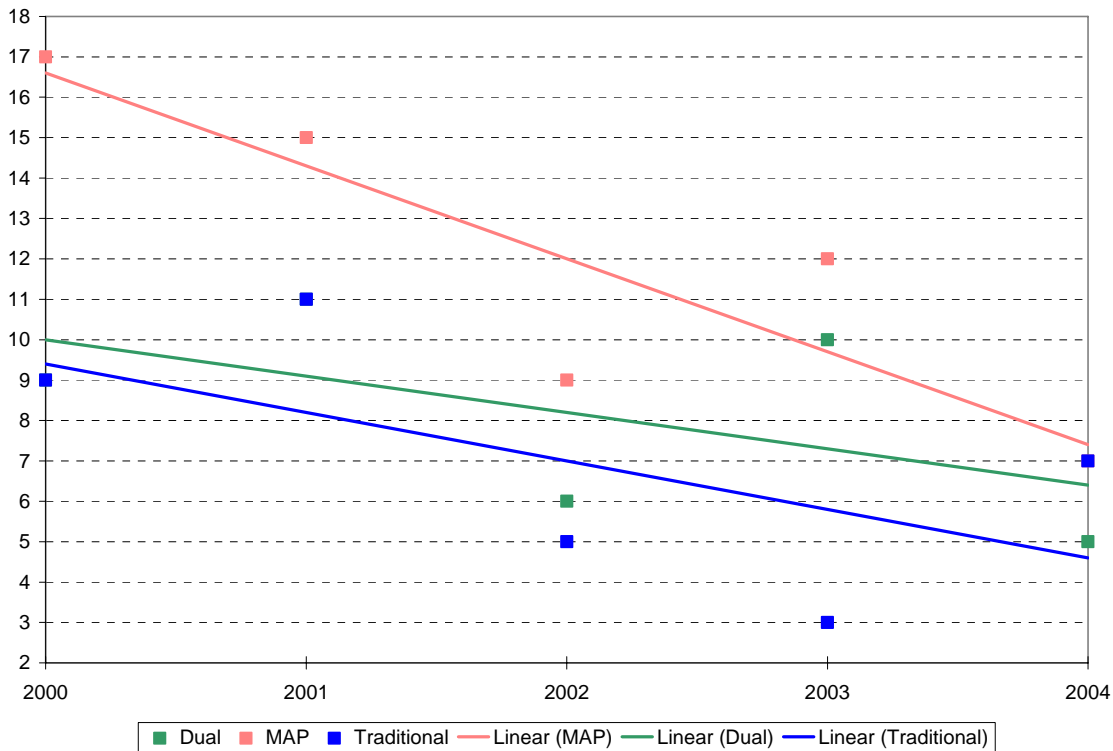
Math NP

**Table 6.1.3**

	Net difference between Subject Program Average NP and California Average NP		
	Dual	MAP	Traditional
2000	+9	+17	+9
2001	+11	+15	+11
2002	+6	+9	+5
2003	+10	+12	+3
2004	+5	+7	+7

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 6.1.3**



**Measure 6.2** The change, over time, in the difference between the Normalized CST Proficiency percentage of a subject program and the CST Proficiency percentage of all California schools of the same grade level. For example, if a program has (Percentage of Students Scoring Advanced or Proficient on CST ELA) = 22, and all California schools of the same grade level have (Percentage of Students Scoring Advanced or Proficient on CST ELA) = 24, then the difference = -2.

**Data:** See Tables 6.2.1, 6.2.2 and Charts 6.2.1, 6.2.2

**Findings:**

- In CST ELA, over a period of 4 years ending in 2004<sup>26</sup>, MAP and Dual-Immersion Proficiency percentages have increased significantly in comparison with same-grade California schools. Traditional Proficiency percentages have decreased significantly in comparison with same-grade California schools.
- In CST Math, over a period of 4 years ending in 2004, MAP and Traditional Proficiency percentages have decreased significantly in comparison with same-grade California schools. Dual-Immersion Proficiency percentages have increased in comparison with same-grade California schools, but by a statistically-insignificant margin.
- In CST ELA, over a period of 4 years ending in 2004, MAP and Dual-Immersion Proficiency percentages have increased significantly in comparison with Traditional.
- In CST Math, over a period of 4 years, Dual-Immersion Proficiency percentages have increased significantly in comparison with MAP and Traditional.

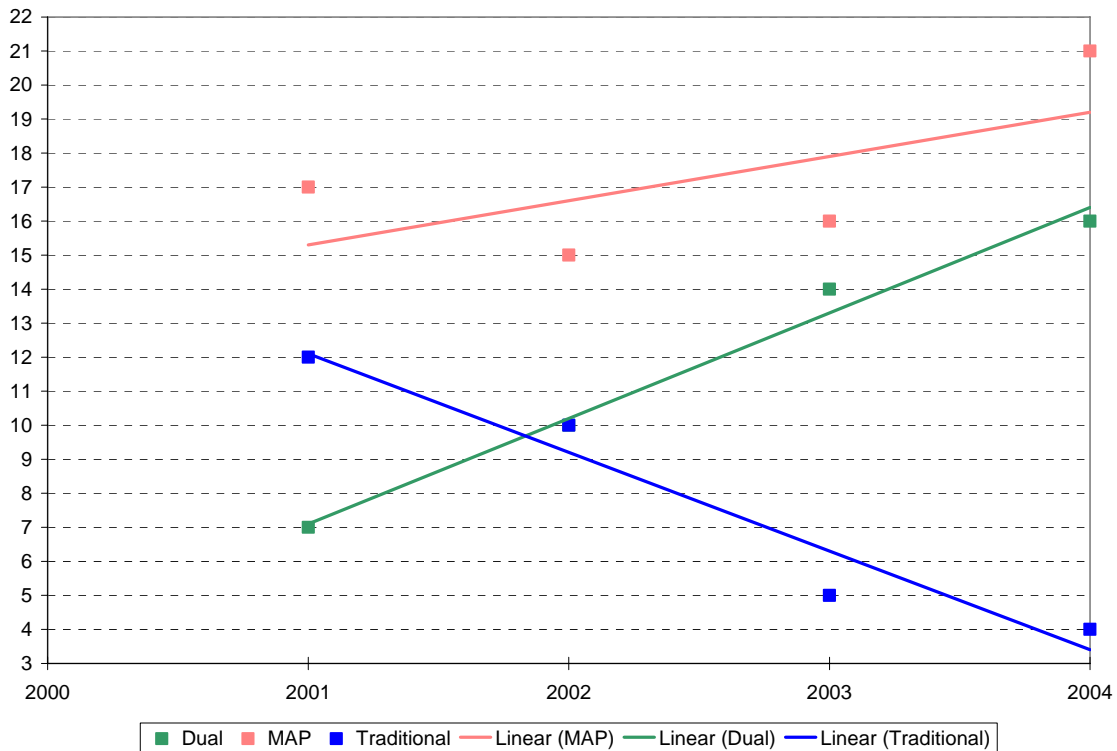
CST ELA

**Table 6.2.1**

	Net difference between Subject Program CST Proficiency and California CST Proficiency		
	Dual	MAP	Traditional
2001	+7	+17	+12
2002	+10	+15	+10
2003	+14	+16	+5
2004	+16	+21	+4

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 6.2.1**



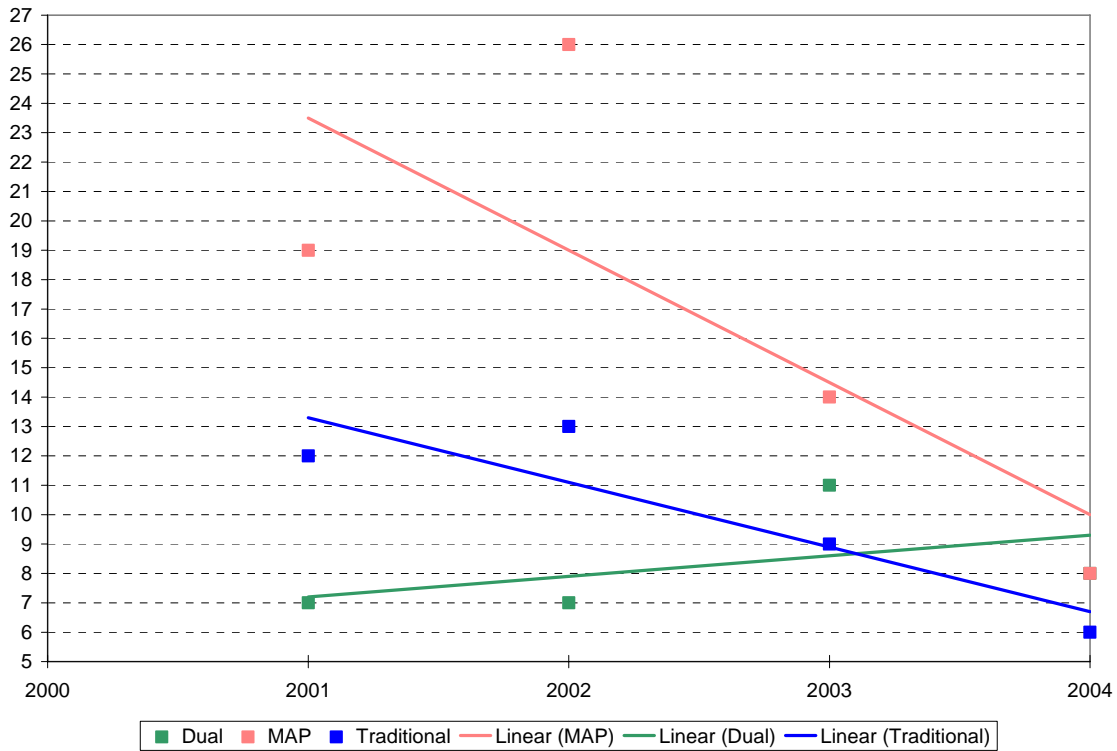
CST Math

**Table 6.2.2**

	Net difference between Subject Program CST Proficiency and California CST Proficiency		
	Dual	MAP	Traditional
2001	+7	+19	+12
2002	+7	+26	+13
2003	+11	+14	+9
2004	+8	+8	+6

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 6.2.2**



## **Question 7**

How are EO and EL students in the district's Traditional Program, Dual-Immersion Program, and Multi-Age Program presently performing in comparison to similar students throughout all three programs and in comparison to similar students throughout California and the United States? In all of these comparisons, EO students shall be compared with EO students --- and EL students shall be compared with EL students.

### **Measures and Data**

For continuity, the analysis uses the same 3 measures that were used to answer *Question 3* and *Question 5*. The measures and data are presented immediately after the findings.

### **Question 7 Findings**

From the measures and data presented on the following pages, the study makes the following findings:

- On a broad range of measures, EO students in all 3 programs scored significantly higher than the national and California averages in Reading, Language and Math.
- On a broad range of measures, MAP EO students scored significantly higher than Traditional students and Dual-Immersion students in Reading and Language. In Math, Dual-Immersion EO students scored higher than MAP and Traditional students, but by a statistically-insignificant margin.<sup>27</sup>

- On a broad range of measures, EL students in all 3 programs scored significantly higher than the national and California averages in Reading and Language. MAP scored significantly higher than the national and California averages in Math.
- On a broad range of measures, MAP EL students scored significantly higher than Traditional students and Dual-Immersion students in Reading, Language, and Math.

**Measure 7.1 Average Student NP Compared to National Average** – This measure compares the average student score on the 2004 CAT/6 to the average student nationwide.

**Data:** See Tables 7.1.1, 7.1.2

**Findings:**

- EO students in all 3 programs scored significantly higher than the national average in Reading, Language and Math.
- EO students in MAP scored significantly higher than students in both other programs in Reading and Language. EO students in Traditional scored significantly higher than students in Dual-Immersion in Reading and Language.
- EO students in all 3 programs scored the same statistically in Math.
- EL students in all 3 programs scored significantly higher than the national average in Reading, Language and Math.
- EL students in MAP scored significantly higher than students in both other programs in Reading, Language and Math. EL students in Traditional scored significantly higher than students Dual-Immersion in Reading and Language.

**Table 7.1.1**

	Average Reading NP	Average Language NP	Average Math NP
Dual-Immersion EO	59	60	69
MAP EO	74	74	69
Traditional EO	65	67	67
National Average EO	53	54	58

**Table 7.1.2**

	Average Reading NP	Average Language NP	Average Math NP
Dual-Immersion EL	28	36	42
MAP EL	60	60	55
Traditional EL	35	39	41
National Average EL	23	26	33

**Measure 7.2 Average Student NP Compared to California Average NP for Same Grade Levels** – This measure compares the average student score on the 2004 CAT/6 to the average California student in the same grades as the subject program.

**Data:** See Tables 7.2.1, 7.2.2

**Findings:**

- EO students in all 3 programs scored significantly higher than the California average in Reading, Language and Math.
- EO students in MAP scored significantly higher than students in both other programs in Reading and Language. EO students in Traditional scored significantly higher than students Dual-Immersion in Reading and Language.
- EO students in all 3 programs scored the same statistically in Math.
- EL students in all 3 programs scored significantly higher than the California average in Reading, Language and Math.
- EL students in MAP scored significantly higher than students in both other programs in Reading, Language and Math. EL students in Traditional scored significantly higher than students in Dual-Immersion in Reading and Language.

**Table 7.2.1**

	Average Reading NP	Average Language NP	Average Math NP
Dual-Immersion EO	59	60	69
MAP EO	74	74	69
Traditional EO	65	67	67
California Average EO	51	52	56

**Table 7.2.2**

	Average Reading NP	Average Language NP	Average Math NP
Dual-Immersion EL	28	36	42
MAP EL	60	60	55
Traditional EL	35	39	41
California Average EL	19	22	28

### **Measure 7.3 Percentage of Students Scoring Proficient or Advanced on the 2004 CST –**

This measure compares the percentage of students scoring proficient or advanced on the 2004 CST to the percentage of all California students scoring proficient or advanced in the same grades as the subject program.

**Data:** See Tables 7.3.1, 7.3.2

#### **Findings:**

- EO students in all three programs scored significantly higher than the California average percentage in CST ELA. EO students in Dual-Immersion scored significantly higher than the California average percentage in CST Math.
- EO students in MAP scored significantly higher than Dual-Immersion and Traditional students in CST ELA. Dual-Immersion EO students scored significantly higher than MAP and Traditional students in CST Math.
- EL students in MAP scored significantly higher than the California average percentage in CST ELA and CST Math. EL students in Traditional scored higher than the California average percentage in CST ELA, but by a statistically-insignificant margin. EL students in Traditional scored lower than the California EL average percentage in CST Math, but by a statistically-insignificant margin.
- EL students in MAP scored significantly higher than students in Traditional and Dual-Immersion in CST ELA. EL students in Dual-Immersion scored significantly higher than Traditional in CST ELA. EL students in MAP scored significantly higher than students in Traditional and Dual-Immersion in CST Math.

**Table 7.3.1**

	Percent Proficient or Advanced	
	CST ELA	CST Math
Dual-Immersion EO	58	58
MAP EO	76	46
Traditional EO	59	49
California EO	43	47

**Table 7.3.2**

	Percent Proficient or Advanced	
	CST ELA	CST Math
Dual-Immersion EL	21	19
MAP EL	30	40
Traditional EL	11	20
California EL	9	22

## **Question 8**

How are EO and EL students in the district's Traditional Program, Dual-Immersion Program, and Multi-Age Program performing on a five-year basis in comparison to similar students throughout all three programs and in comparison to similar students throughout California? In all of these comparisons, EO students shall be compared with EO students --- and EL students shall be compared with EL students.

### **Measures and Data**

Two measures were used to answer this question. For continuity, the measures are the same as were used for *Question 2, 4 and 6*. The measures and data are presented immediately after the findings.

### **Question 8 Findings**

From the measures and data presented on the following pages, the study makes the following findings:

- For EO students, in Reading and Language Arts, using two measures over a period of 5 years ending in 2004, Dual-Immersion scores have increased significantly in comparison with same-grade California schools. MAP scores have increased in comparison with same-grade California schools, but by a statistically-insignificant margin. Traditional scores have decreased significantly in comparison with same-grade California schools.

- For EO students, in Math, using two measures over a period of 5 years ending in 2004, Dual-Immersion scores have increased in comparison with same-grade California schools, but by a statistically-insignificant margin. MAP and Traditional scores have decreased significantly in comparison with same-grade California schools.
- For EO students, in Reading and Language, using two measures over a period of 5 years ending in 2004, Dual-Immersion scores have increased significantly in comparison with both MAP and Traditional. In Math, Dual-Immersion scores have increased in comparison with Traditional and MAP, but by a statistically-insignificant margin.
- For EL students, in Reading, using two measures over a period of 5 years ending in 2004, Dual-Immersion scores have increased significantly in comparison with same-grade California schools. MAP scores have decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. Traditional scores have decreased significantly in comparison with same-grade California schools.
- For EL students, in Language Arts, using two measures over a period of 5 years ending in 2004, Dual-Immersion scores have increased significantly in comparison with same-grade California schools. MAP scores have shown no statistically-significant change in comparison with same-grade California schools. Traditional scores have decreased significantly in comparison with same-grade California schools.
- For EL students, in Math, using two measures over a period of 5 years ending in 2004, Dual-Immersion scores have shown no statistically-significant change in comparison with same-grade California schools. MAP and Traditional scores have decreased significantly in comparison with same-grade California schools.
- For EL students, in Reading, Language and Math, using two measures over a period of 5 years ending in 2004, Dual-Immersion scores have increased significantly in comparison with both MAP and Traditional Program.

**Measure 8.1** The change, over time, in the difference between the Average NP of a subject program and the Average NP of all California schools of the same grade level type. For example, if a program has an average Total Reading NP = 61 and the average of all California schools of the same grade level is NP =55, then the difference = +6.

**Data:** See Tables 8.1.1, 8.1.2, 8.1.3, 8.1.4, 8.1.5, 8.1.6 and  
Charts 8.1.1, 8.1.2, 8.1.3, 8.1.4, 8.1.5, 8.1.6

**Findings:**

- For EO students, in Reading, over a period of 5 years ending in 2004, MAP and Traditional Average Reading NP have decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. Dual-Immersion Average Reading NP has increased significantly in comparison with same-grade California schools.
- For EO students, in Language, over a period of 5 years ending in 2004, MAP and Traditional Average Language NP have decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. Dual-Immersion Program Average Language NP has increased in comparison with same-grade California schools, but by a statistically-insignificant margin.
- For EO students, in Math, over a period of 5 years ending in 2004, MAP Average Math NP has decreased in comparison with same-grade California schools. Dual-Immersion and Traditional Average Math NP has decreased in comparison with same-grade California schools, but by a statistically-insignificant margin.
- For EO students, in Reading and Math, over a period of 5 years ending in 2004, Dual-Immersion Average NP has increased significantly in comparison with both MAP and Traditional. In Language, Dual-Immersion NP has increased significantly in comparison with MAP; Dual-Immersion NP has increased in comparison with Traditional, but by a statistically-insignificant margin.
- For EL students, in Reading, over a period of 5 years ending in 2004, Traditional Average Math NP has decreased in comparison with same-grade California schools. MAP Average NP has decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. Dual-Immersion Average NP has increased significantly in comparison with same-grade California schools.

- For EL students, in Language, over a period of 5 years ending in 2004, Traditional Average NP has decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. MAP Average NP has increased in comparison with same-grade California schools, but by a statistically-insignificant margin. Dual-Immersion Average NP has increased significantly in comparison with same-grade California schools.
- For EL students, in Math, over a period of 5 years ending in 2004, Dual-Immersion Average NP has decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. Traditional and MAP Average NP have decreased significantly in comparison with same-grade California schools.
- For EL students, in Reading, Language and Math, over a period of 5 years ending in 2004, Dual-Immersion Average NP has increased significantly in comparison with both MAP and Traditional. In Language and Math, MAP scores have increased significantly in comparison with Traditional scores.

## EO Students

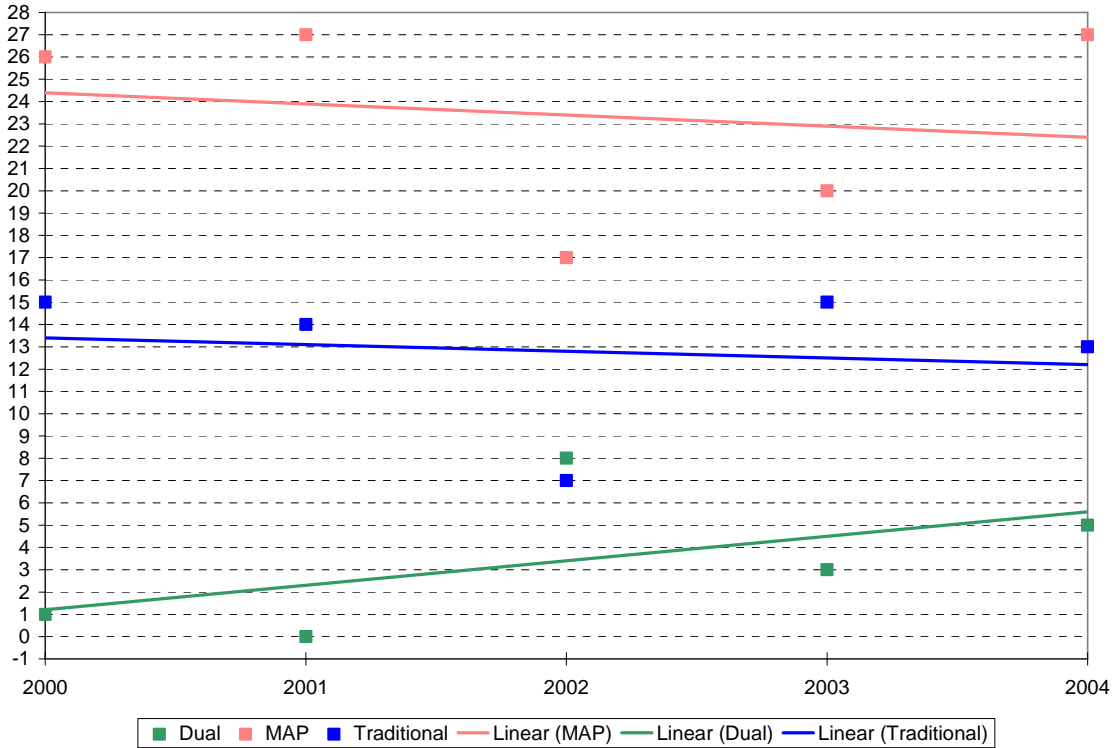
Reading NP

**Table 8.1.1**

	Net difference between Subject Program Average NP and California Average NP		
	Dual	MAP	Traditional
2000	+1	+26	+15
2001	0	+27	+14
2002	+8	+17	+7
2003	+3	+20	+15
2004	+5	+27	+13

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 8.1.1**



**EO Students**

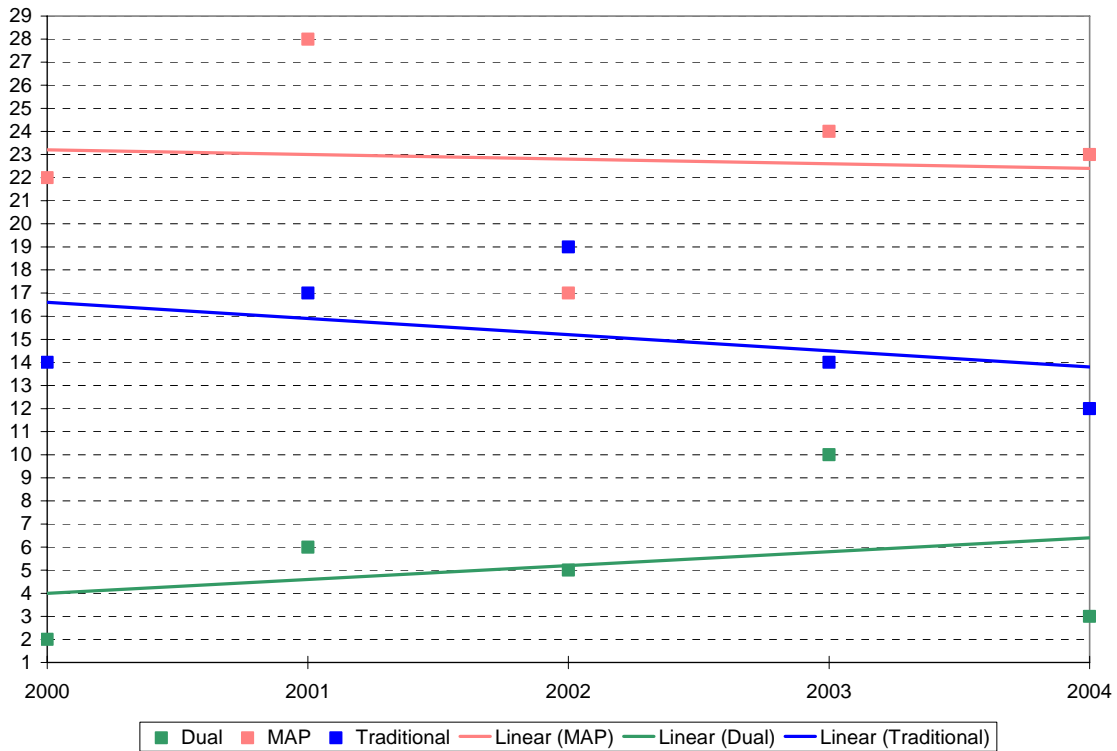
Language NP

**Table 8.1.2**

	Net difference between Subject Program Average NP and California Average NP		
	Dual	MAP	Traditional
2000	+2	+22	+14
2001	+6	+28	+17
2002	+5	+17	+19
2003	+10	+24	+14
2004	+3	+23	+12

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 8.1.2**



## EO Students

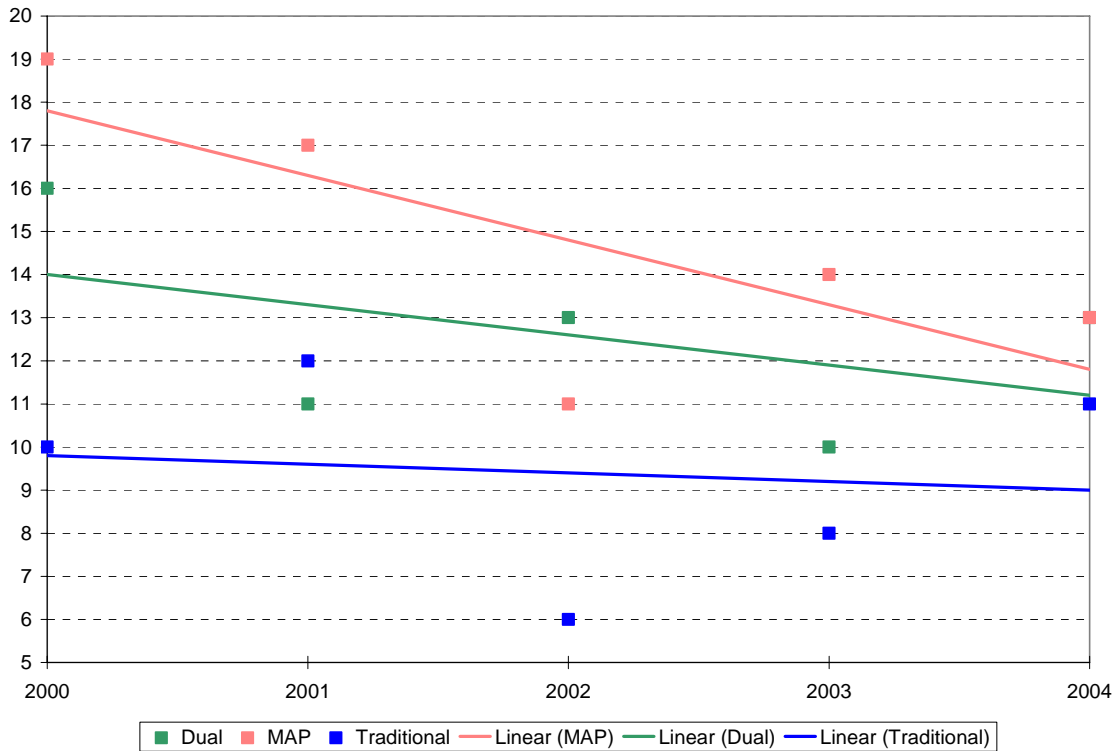
Math NP

**Table 8.1.3**

	Net difference between Subject Program Average NP and California Average NP		
	Dual	MAP	Traditional
2000	+16	+19	+10
2001	+11	+17	+12
2002	+13	+11	+6
2003	+10	+14	+8
2004	+13	+13	+11

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 8.1.3**



**EL Students**

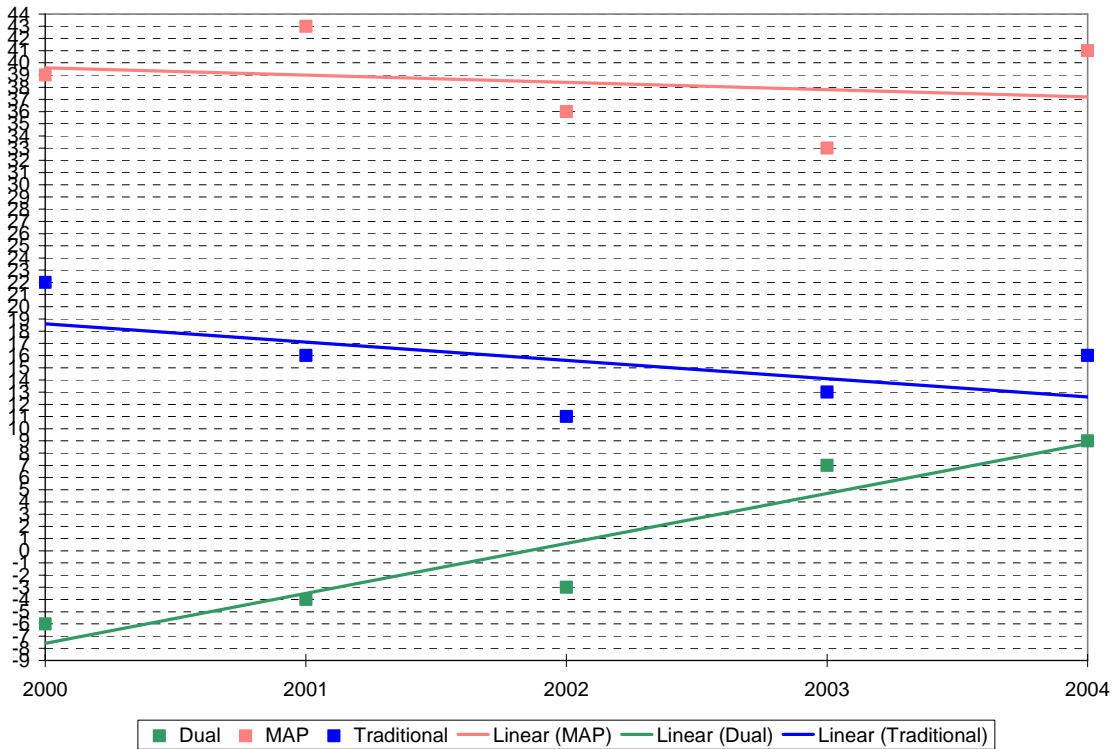
Reading NP

**Table 8.1.4**

Net difference between Subject Program Average NP and California Average NP			
	Dual	MAP	Traditional
2000	-6	+39	+22
2001	-4	+43	+16
2002	-3	+36	+11
2003	+7	+33	+13
2004	+9	+41	+16

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 8.1.4**



**EL Students**

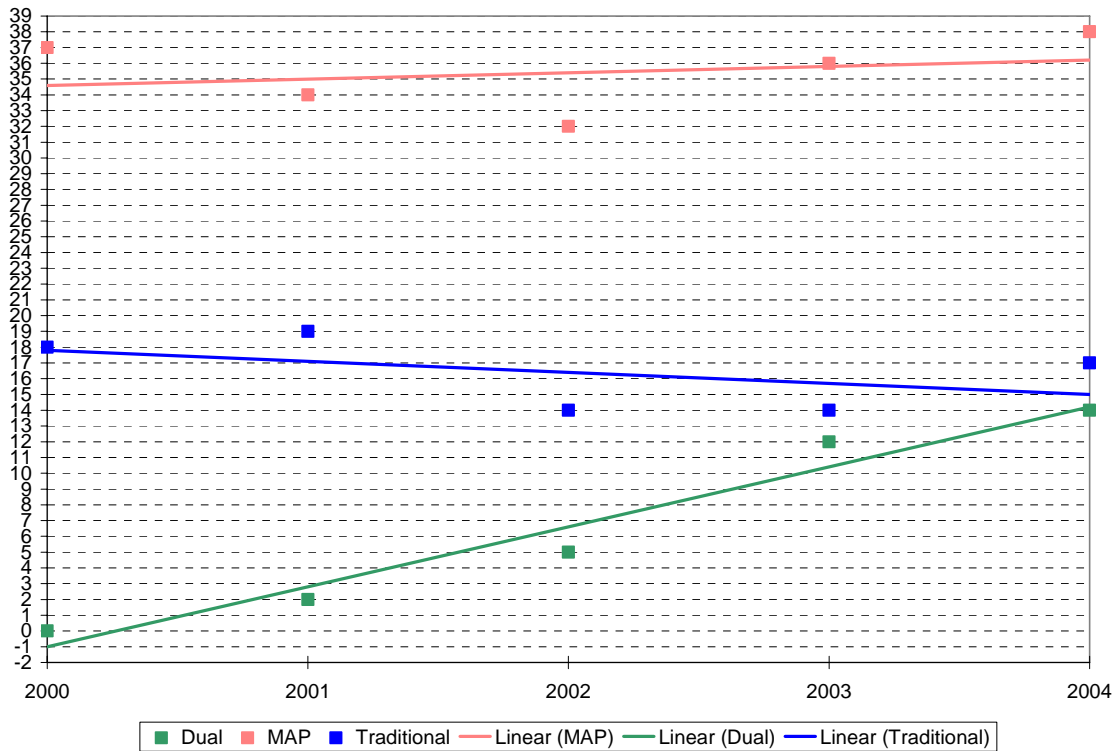
Language NP

**Table 8.1.5**

	Net difference between Subject Program Average NP and California Average NP		
	Dual	MAP	Traditional
2000	0	+37	+18
2001	+2	+34	+19
2002	+5	+32	+14
2003	+12	+36	+14
2004	+14	+38	+17

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 8.1.5**



**EL Students**

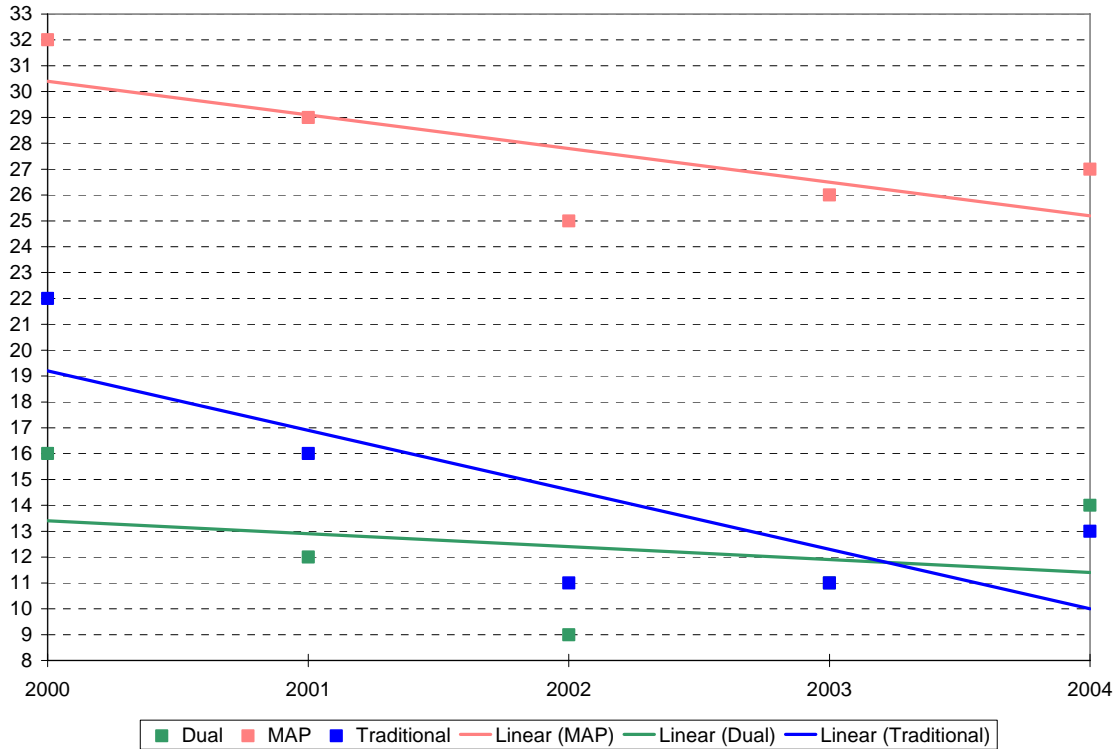
Math NP

**Table 8.1.6**

	Net difference between Subject Program Average NP and California Average NP		
	Dual	MAP	Traditional
2000	+16	+32	+22
2001	+12	+29	+16
2002	+9	+25	+11
2003	+11	+26	+11
2004	+14	+27	+13

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 8.1.6**



**Measure 8.2** The change, over time, in the difference between the CST Proficiency percentage of a subject program and the CST Proficiency percentage of all California schools of the same grade level type. For example, if a program has (Percentage of Students Scoring Advanced or Proficient on CST ELA) = 22, and all California schools of the same grade level have (Percentage of Students Scoring Advanced or Proficient on CST ELA) = 24, then the difference = -2.

**Data:** See Tables 8.2.1, 8.2.2, 8.2.3, 8.2.4 and  
Charts 8.2.1, 8.2.2, 8.2.3, 8.2.4

**Findings:**

- For EO students, in CST ELA, over a period of 4 years ending in 2004, MAP and Dual-Immersion Proficiency percentages have increased significantly in comparison with same-grade California schools. Traditional percentage has decreased significantly in comparison with same-grade California schools.
- For EO students, in CST Math, over a period of 4 years ending in 2004, Dual-Immersion Proficiency percentages have increased significantly in comparison with same-grade California schools. MAP and Traditional percentages have decreased significantly in comparison with same-grade California schools.
- For EO students, in CST ELA, over a period of 4 years ending in 2004, Traditional Proficiency percentage has decreased significantly in comparison with both MAP and Dual-Immersion. In CST Math, Dual-Immersion has increased significantly in comparison with MAP and Traditional.
- For EL students, in CST ELA, over a period of 4 years ending in 2004, Dual-Immersion Proficiency percentages have increased significantly in comparison with same-grade California schools. MAP and Traditional percentages have decreased significantly in comparison with same-grade California schools.
- For EL students, in CST Math, over a period of 4 years ending in 2004, Dual-Immersion Proficiency percentages have increased in comparison with same-grade California schools, but by a statistically-insignificant margin. MAP Proficiency percentages have decreased in comparison with same-grade California schools, but by a statistically-insignificant margin. Traditional Proficiency Percentages have decreased significantly in comparison with same-grade California schools.
- For EL students, in both CST ELA and CST Math, over a period of 4 years ending in 2004, Dual-Immersion has increased significantly in comparison with MAP and Traditional.

## EO Students

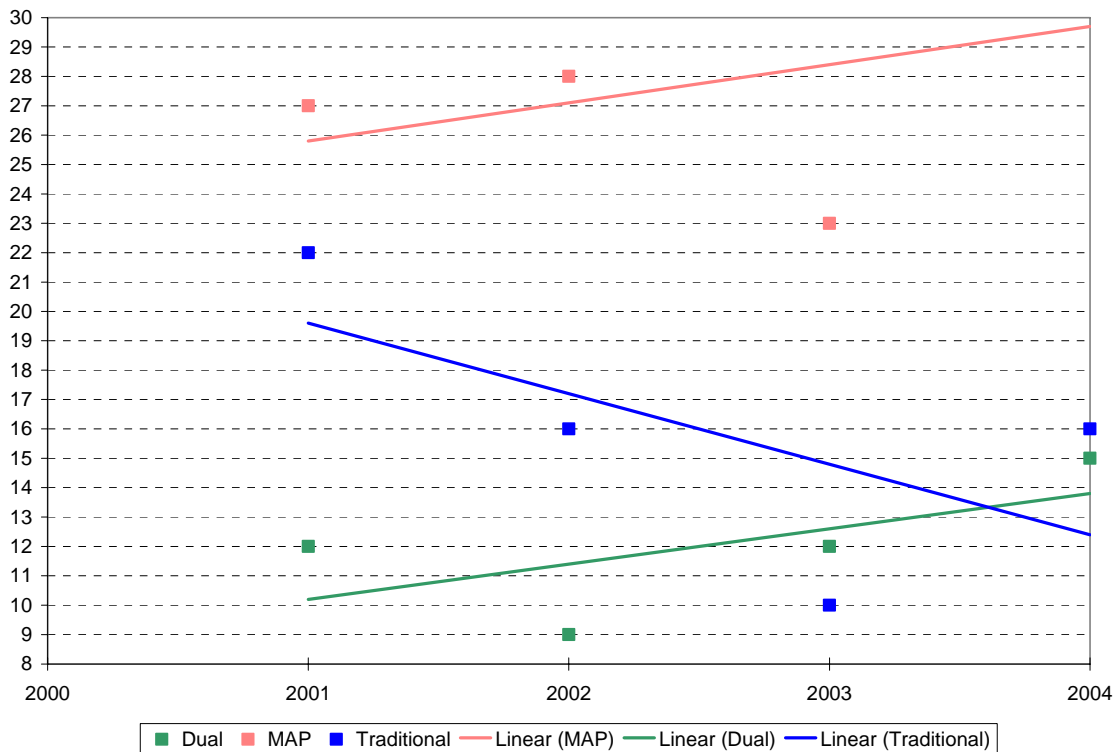
CST ELA

**Table 8.2.1**

	Net difference between Subject Program CST Proficiency and California CST Proficiency		
	Dual	MAP	Traditional
2001	+12	+27	+22
2002	+9	+28	+16
2003	+12	+23	+10
2004	+15	+33	+16

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 8.2.1**



## EO Students

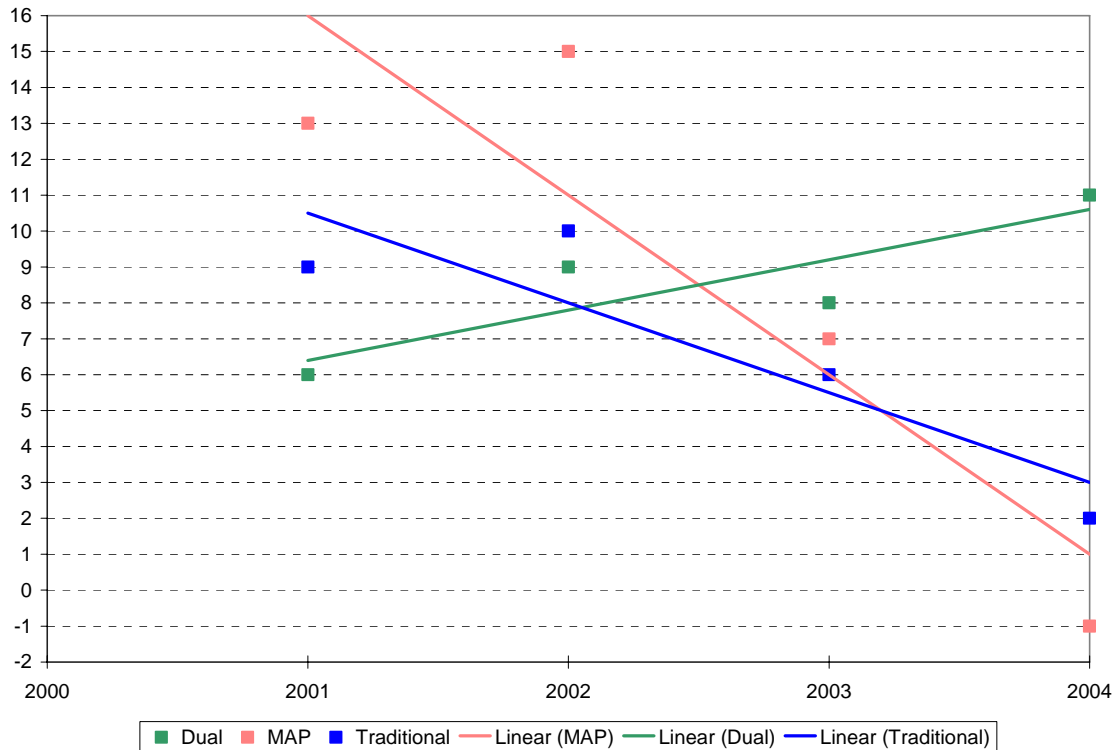
CST Math

**Table 8.2.2**

	Net difference between Subject Program CST Proficiency and California CST Proficiency		
	Dual	MAP	Traditional
2001	+6	+13	+9
2002	+9	+15	+10
2003	+8	+7	+6
2004	+11	-1	+2

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 8.2.2**



## EL Students

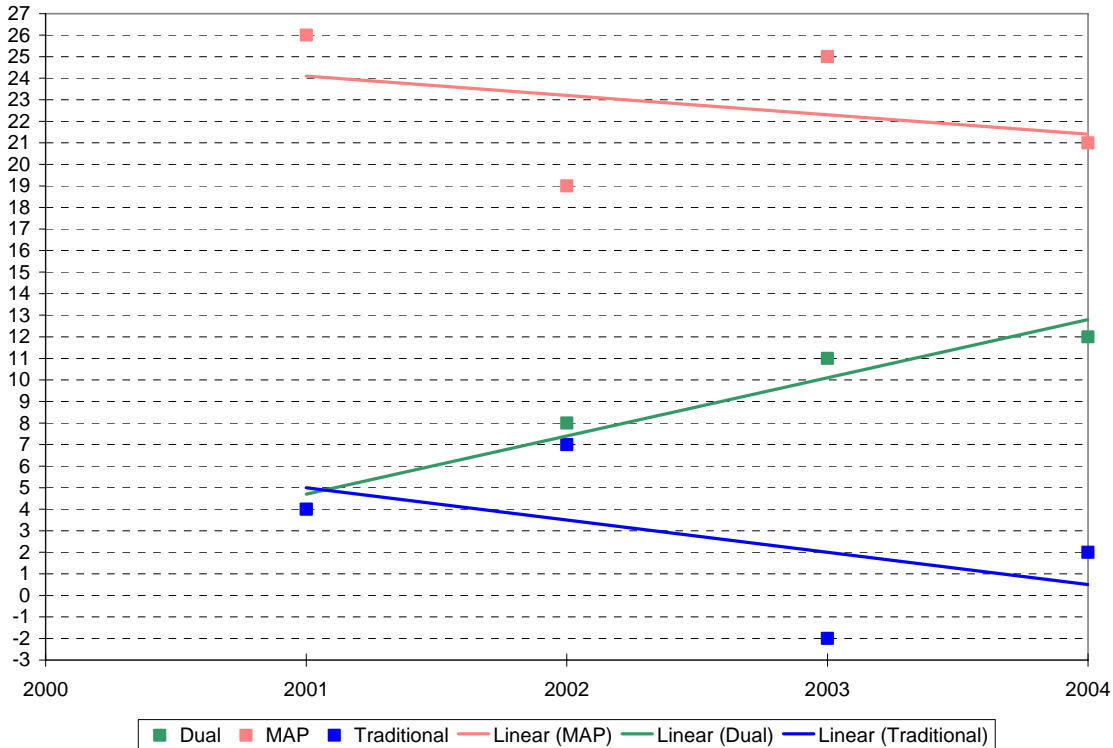
CST ELA

**Table 8.2.3**

	Net difference between Subject Program CST Proficiency and California CST Proficiency		
	Dual	MAP	Traditional
2001	+4	+26	+4
2002	+8	+19	+7
2003	+11	+25	+ -2
2004	+12	+21	+2

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 8.2.3**



**EL Students**

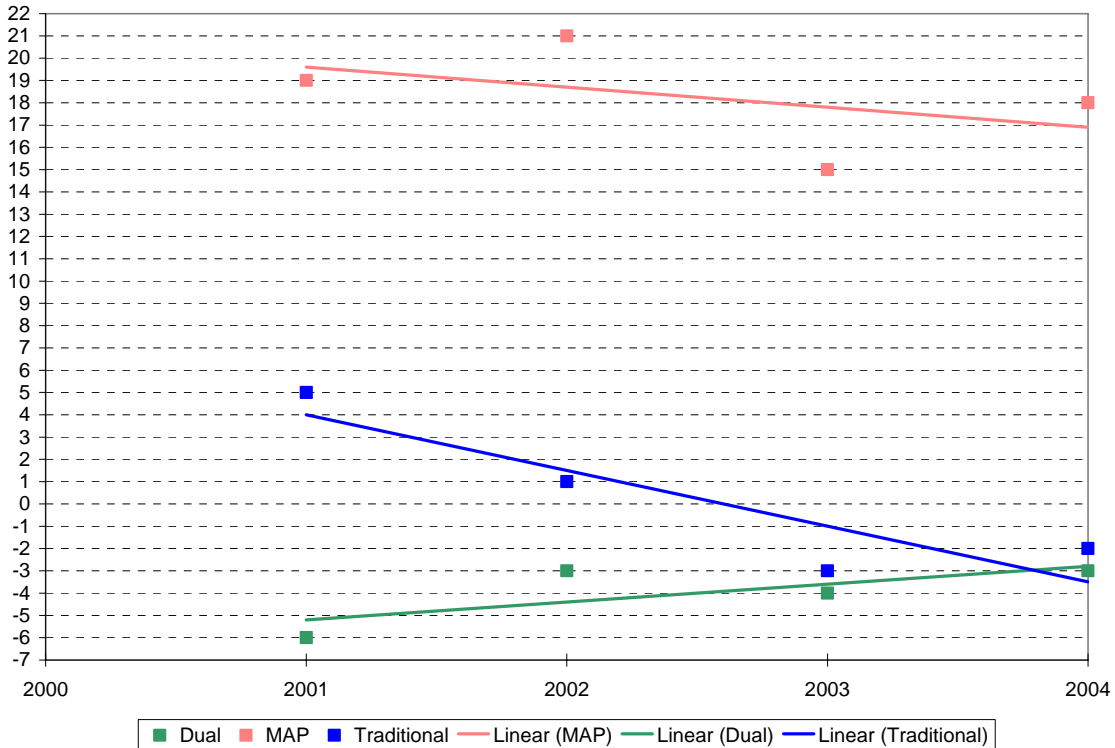
CST Math

**Table 8.2.4**

	Net difference between Subject Program CST Proficiency and California CST Proficiency		
	Dual	MAP	Traditional
2001	-6	+19	+5
2002	-3	+21	+1
2003	-4	+15	-3
2004	-3	+18	-2

We now plot the differences on a scatter plot and generate a *least squares linear regression trendline* to show the major trend since it might not be apparent from the scattered points.

**Chart 8.2.4**



## Endnotes

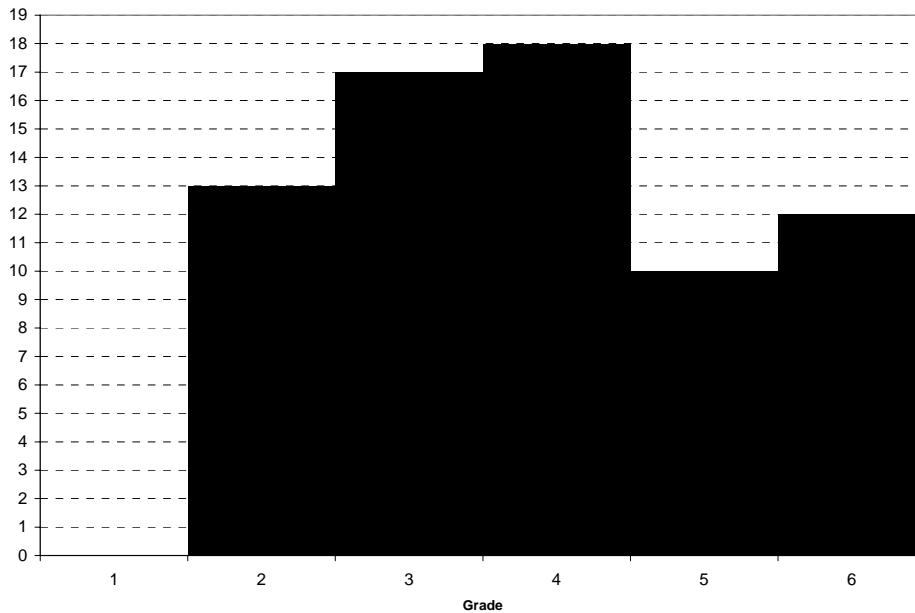
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<sup>1</sup> Source Data: CBED 4/26/04

<sup>2</sup> Madrone Continuation High School is not included in this study because its 22 students do not comprise a statistically-usable group. San Geronimo Primary is not included as a discrete school in this study for two reasons. Only its grade 2 students would be available for study because grade K and 1 students do not sit for the STAR test. Also, in early years of this study, the district's grade 2 students attended San Geronimo Elementary. Grade 2 students at San Geronimo Primary may in fact be included when they comprise part of a cohort. Grade 12 students at San Geronimo High School are not included in this study because they do not sit for the STAR test. CAHSEE results are not included in this study because their history is not sufficient.

<sup>3</sup> No data has been omitted from this presentation format. The study can certainly be reformatted for electronic or print publication in a technical journal.

<sup>4</sup> For all comparative analysis between district programs and California/National averages, it is first necessary to normalize the program results to a grade-neutral result. Consider the following histogram of 2001 Dual-Immersion Program *by grade*. Failing to normalize would, for example, give equal weight to grade 2 math scores and grade 5 math scores. In fact, California's grade 2 students score 9 points higher, on average NP, than California grade 5 students. By normalizing, we correct for such differentials.



<sup>5</sup> The raw comparative findings among programs in *Question 3* and *Question 4* can be largely attributed to the distinct *language fluency* distributions among the three programs. Therefore, it must be noted that the 3 programs have unequal *language fluency* distributions. MAP is 20% EL. Traditional is 27% EL. Dual-Immersion is 47% EL. Consider that in California, for example, the Average Reading NP of EL students is 19; the Average Reading NP of EO students is 51. Truer pictures of relative program performance will be found in *Question 5* and *Question 6* where we normalize the populations for language fluency distribution.

<sup>6</sup> The fact that one program has higher scores than another program in a given year is of less consequence than one might think. In fact, it tells us only about the student makeup of the program, a starting point. Therefore, the answers to Questions 1,3,5,7 (the *static-year* questions) are of much less import than the answers to questions 2,4,6,8 (the *growth rate over time* questions).

<sup>7</sup> See Endnote 5.

<sup>8</sup> See Endnote 5.

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<sup>9</sup> See Endnote 5.

<sup>10</sup> See Endnote 5.

<sup>11</sup> Source Data: All 1154 student records available on the RAW 2004 STAR results file.

<sup>12</sup> The study deliberately avoids using *making the API Growth Target* and *making the NCLB AYP* as indicators. In the case of *making the API Growth Target*, the target itself is an arbitrary target set by API formula. There is no way that *making the API Growth Target* can have comparative value in the universe of schools. In the same way, *making the NCLB AYP* has no value in making a comparison. In both cases, it is the underlying data that must be used to make comparisons between schools.

<sup>13</sup> Throughout this study *real meaning* attaches to *comparative* words such as *significantly lower* and *significantly higher*. To say that *A is significantly higher than B* is to say that *A is higher than B by an amount greater than the margin of error*. Such a statement is not the result of chance; the statement has meaning and can be relied upon. To say that *A is higher than B, but by a statistically-insignificant margin*, means that one should place no value on the statement. The confidence level in the statement is too low and the statement may be the result of chance.

*Margin of error* can be stated mathematically for every affirmative statement. It must, however, be stated as part of a complete statistical statement --- and there are many different kinds of statistical statements possible. It is not enough to say “We have determined (sampled) the percentage of Smith supporters to be x% with a *margin of error* of y%”. The statement needs a meaningful independent clause. One probably means “We have calculated (sampled) the

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percentage of Smith supporters to be  $x\%$ , and if you extend this to the universe of all likely voters, the percentage of Smith supporters among all voters will be  $x\% \pm y\%$ . This is a typical example of *sampling/population margin of error*. The margin of error is the sum of non-sampling error and sampling error. The sampling error is largely dependent upon the size of the sample and the size of the population.

One can use *margin of error* in a different sense. Consider this example from the study. School x has an average NP of 41. This calculation is exact and has NO *margin of error*. It is simple arithmetic. It can't have a margin of error until we have an intended use for the statement. Our intended use for the statement, throughout this study, is to ask "If we had all the same students, and could turn back the clock, and could test them again, how certain are we that the school's average NP would be 41?" Alternately, "If we had a demographically identical group of students, and put them through the same exact schooling, how certain are we that the school's average NP would be 41?" We are asking, quite simply, "Could we duplicate the results?" The calculation is largely dependent upon the size of the sample and the variance or standard deviation of the population.

When the study says, for example, "Traditional scored significantly higher than the California Average in Language NP", we are really using the following sequence of logic:

1. California Average NP =  $45 \pm 0$  NP. California tested 4,378,214 students. The reason the margin of error is  $\pm 0$  NP is that with such a large number, the calculation shows that if we tested all these students again, the probability is greater than 97% that the change in Average NP would be 0. Technically speaking, the margin of error *approaches 0* and is accepted to be 0; we have seen it calculated at  $< 0.0004$ .
2. Traditional Average NP =  $57 \pm 1.9$ NP. The reason the *margin of error* is  $\pm 1.9$ NP is that with a group of only 294 students, the calculation expects that if we tested all these students again, the probability is greater than 97% that the change in Average NP would be  $\pm 1.9$  NP.
3. Since the likely range of California Average NP is 45 to 45, and the likely range of Traditional Average NP is 55.1 to 58.9, we may say that Traditional NP is at least 10.1 NP > California Average NP.

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4. Therefore, we say “Traditional scored significantly higher than the California Average in Language NP”.
  5. Hypothetically, were the Traditional margin of error to be  $\pm 13.5$  NP, its likely range would be 43.5 to 70.5, and we would be forced to state, “Traditional scored higher than the California Average in Language NP, but by a statistically-insignificant margin”. Why? Traditional *did* score higher than California, but a re-testing *might* result in an Average NP of 43.5 for Traditional, and that would be *lower* than the California range.

<sup>14</sup> It is well settled that one may not take an average of NP since NP is a non-linear function. To arrive at average student NP it is necessary to convert NP to NCE, take an average of NCE, then convert back to NP.

<sup>15</sup> Source Data: the cohort of 565 students with valid records on ALL of the RAW 2000, 2001, 2002, 2003 and 2004 STAR results files.

<sup>16</sup> The choice of measures used to answer this question requires some discussion. Certain popular indicators cannot be used in a longitudinal study for statistical or logistical reasons:

- API cannot be easily used for two reasons. First, although it is a linear function of its underlying components, one of the underlying components itself is a non-linear function. Second, API is re-based each year, destroying the continuity of the linear function itself.
- *Meeting API Growth Targets* cannot be used for the reasons already stated above. Also, the *yes/no* nature of the answer produces a very high margin of error.
- Raw change in NP, NCE, or mean scaled score cannot be used since the 2003 change from SAT-9 to CAT/6 invalidates statistical comparisons over the 2000-2004 period despite CDE efforts to reconcile the SAT-9 to the CAT/6.

<sup>17</sup> Source Data: 2001-2004 CST ELA Performance Levels from STAR results files and CDE on-line Internet website; 2002-2004 CST Math Performance Levels from STAR results files and CDE on-line Internet website; EdTech Associates computation for 2001 CST Math Performance Level.

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<sup>18</sup> For the analysis of the Dual-Immersion Program, MAP, and Traditional Program, the study uses the cohorts of all students for whom there are STAR scores in all years from 2000 through 2004 and who were in the same program for all years from 2000 through 2004. Of the 565 students with valid results in all years, the cohorts are as follows:

- 70 students - Dual Immersion Cohort
- 59 students - MAP Cohort
- 294 students - Traditional Cohort
- 142 students - Were not in the same program for all years

<sup>19</sup> The fourth and fifth measures used for *question 1* are not used for *question 3*. California does not publish average API by grade, so we cannot normalize the program's student grade distribution to any standard. Separately, comparison to *100 Similar Schools* would not be relevant.

<sup>20</sup> Scores from the three programs will not average to the scores for the entire district since there are 1154 student STAR score records for the district but only 565 students in the cohort. The other 589 students are certainly in one of the three programs in 2004, but they are not in the cohort.

<sup>21</sup> Source Data: Electronic Spreadsheet and rtf files, and printed lists, provided by district

<sup>22</sup> See Endnote 6

<sup>23</sup> United States relative distribution is 81% EO and 19% EL.

<sup>24</sup> California relative distribution is 69% EO and 31% EL.

<sup>25</sup> See Endnote 6

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<sup>26</sup> See Endnote 17

<sup>27</sup> See Endnote 6