

## MEMORANDUM

September 12, 2011

TO: Board Members

FROM: Terry B. Grier, Ed.D.  
Superintendent of Schools

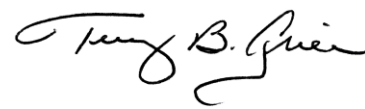
SUBJECT: **2011 SIOP PROFESSIONAL DEVELOPMENT INITIATIVE PROGRAM  
EVALUATION REPORT**

CONTACT: Carla Stevens, 713-556-6700

Sheltered Instruction Observation Protocol (SIOP) training promotes and enhances the use of instructional strategies and modifications that allow English language learners (ELLs) to access an English language curriculum more effectively. The Multilingual Department, in conjunction with Houston Independent School District (HISD), has offered district-wide SIOP professional development training since 2009–2010, focusing on teachers of secondary level ELLs.

The report summarizes data from the SIOP training for teachers which occurred in 2010–2011. Included are demographic data for program participants, information on teacher reactions to the SIOP training and on their implementation of SIOP strategies, as well as data on the impact of SIOP training on the academic performance of students of those teachers.

A total of 181 secondary-level teachers received SIOP training. Subjects they taught included English, mathematics, and science. Results showed that teachers were satisfied overall with the quality of the SIOP training, and that more than 80 percent of them implemented SIOP strategies in the classroom either “always” or usually”. They did express some concern over the amount of ongoing support they had received. ELL students of SIOP trained teachers showed gains in performance on the TAKS test, but not on the Stanford 10. Those same students also showed gains in English language proficiency (as measured by the TELPAS) compared to other ESL students.

  
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TBG

cc: Superintendent's Direct Reports  
Chief School Officers  
School Improvement Officers  
Matilda Orozco  
Jennifer Alexander  
Paola Espitia  
Terrie Armstrong

# RESEARCH

**Educational Program Report**



## **SIOP Professional Development Initiative Evaluation Report 2010-2011**



## 2011 Board of Education

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# RESEARCH

## Educational Program Report



### SIOP Professional Development Initiative Evaluation Report 2010–2011

#### TABLE OF CONTENTS

Executive Summary.....	1
Introduction.....	3
Literature Review .....	4
Methods.....	4
Results .....	6
Conclusions .....	11
Recommendations .....	12
References .....	12
Appendices .....	13

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## EXECUTIVE SUMMARY

### SIOP PROFESSIONAL DEVELOPMENT INITIATIVE EVALUATION REPORT 2010–2011

#### Program Description

Sheltered Instruction Observation Protocol (SIOP) training promotes and enhances the use of instructional strategies and modifications that allow English language learners (ELLs) to access an English language curriculum more effectively. During the 2010–2011 school year, the Multilingual Department, in conjunction with the Houston Independent School District (HISD), continued a district-wide SIOP Professional Development initiative, focusing on teachers of secondary level ELLs. This effort is relevant to two of the core initiatives of the district's strategic direction: putting an effective teacher in every classroom, and adoption of rigorous instructional standards and supports.

Interest in expanding the use of SIOP for secondary ELLs came about due to concern over their performance on certain indicators in the state Performance Based Monitoring Analysis System (PBMAS). Specifically, the dropout rates for secondary ELLs have consistently been higher than the district average. It was determined that some type of instructional support for secondary ELLs might alleviate this problem, and Sheltered Instruction was chosen as the intervention.

Under this initiative, training was provided in 2009–2010 by representatives of Pearson, Inc., which owns the copyright to the SIOP name and methodology. Training was provided to campus administrators, and to 23 ESL content specialists (who were assigned to work with specific feeder patterns in the district). SIOP training was also provided to selected secondary content teachers, primarily in reading, mathematics, and science.

During 2010–2011, the implementation of SIOP training was modified in the following ways. First, there were no outside representatives from Pearson, Inc. involved in any SIOP train-

ing. Almost all SIOP trainings relied on district staff (secondary special populations specialists) who had previously received training. Second, the day-to-day responsibilities of these specialists were under the administrative control of the district's various school improvement officers (SIOs). In a number of cases, these specialists were not utilized to provide SIOP training since it was determined that other priorities existed. The net result of this is that SIOP training throughout the district may have been, overall, less comprehensive than it had been in the previous year.

#### Key Findings

##### *1. What was the demographic profile of teachers who received SIOP training?*

- A total of 414 teachers received SIOP training, with 233 teachers attending a single session of less than 2 hours duration, and 181 receiving ongoing consultation/training.
- Thirty-six of the 181 SIOP-trained teachers were English teachers, 46 were math teachers, 16 were science teachers, and 86 taught other subjects.
- Participating teachers were predominantly female (66%), had a mean age of 41.8 years, and had an average of 12.0 years of previous teaching experience (9.5 years in the district).

##### *2. What was the level of satisfaction of teachers with the SIOP training they received?*

- Twenty teachers responded to an online survey assessing attitudes toward the SIOP training they had received.
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- Overall responses were positive, indicating a high degree of satisfaction with the training.

*3. How effectively was sheltered instruction implemented by the teachers who attended training?*

- Thirteen teachers responded to an online survey regarding implementation issues with SIOP.
- Teachers felt that implementation of SIOP strategies in the classroom was somewhat problematic, particularly in terms of the amount of ongoing support teachers felt was available to them.
- Most of the individual SIOP strategies were used by more than 80% of teachers either “usually” or “always.”

*4. What was the impact of SIOP training on the academic performance of students in classes taught by the selected teachers?*

- On the Stanford 10, students whose teachers received SIOP training showed gains in performance, but the gains were no larger than those shown by ESL students of non-SIOP trained teachers.
- On the English TAKS reading test, students of SIOP trained teachers showed significantly larger gains than did ESL students of non-SIOP trained teachers.
- There was no difference between the groups on the TAKS math test.

*5. What was the impact of SIOP training on English proficiency of students in classes taught by the selected teachers?*

- Thirty-four percent of students whose teachers received SIOP training scored Advanced High on the TELPAS, compared to 35% for ESL students whose teachers received no SIOP training.

- Fifty-eight percent of students of SIOP-trained teachers gained one or more levels of English proficiency between 2010 and 2011, compared to 54% for students of non-SIOP trained teachers, and this difference was statistically significant.

## **Recommendations**

1. The district should attempt to retain outside trainers for SIOP on some regular schedule. In 2010–2011, the strategy was to use previously trained district staff to provide SIOP training to teachers. Staff turnover may be an issue, however, and finding staff who have the necessary expertise in SIOP might become more difficult over time. The district and Multilingual Department should strive to set a schedule whereby appropriate outside consultants are used by the district, perhaps on a rotating basis (every 2-3 years).
2. SIOP training should be more formally implemented and done in a systematic way. In 2010–2011, the specialists who were to provide the SIOP training were often assigned other tasks by their respective SIOs, based on perceived needs or priorities. Districtwide SIOP training suffered as a result. If this or a similar arrangement is repeated in the future, it will again prove difficult to provide comprehensive SIOP training to district teachers.
3. Feedback from teachers who completed the year-end survey suggested that ongoing support from administrators was lacking. This same result was obtained in the previous year’s evaluation of SIOP. Once again, it is recommended that efforts are made to provide more ongoing support for teachers in the implementation of SIOP strategies.

# SIOP PROFESSIONAL DEVELOPMENT INITIATIVE EVALUATION REPORT 2010–2011

## Introduction

### Program Description

Sheltered Instruction Observation Protocol (SIOP) training promotes and enhances the use of instructional strategies and modifications that allow English language learners (ELLs) to access an English language curriculum more effectively. During the 2010–2011 school year, the Multilingual Department, in conjunction with the Houston Independent School District (HISD), continued a district-wide SIOP Professional Development initiative, focusing on teachers of secondary level ELLs. This effort is relevant to two of the core initiatives of the district's strategic direction: putting an effective teacher in every classroom, and adoption of rigorous instructional standards and supports.

Interest in expanding the use of SIOP for secondary ELLs came about due to concern over their performance on certain indicators in the state Performance Based Monitoring Analysis System (PBMAS). Specifically, the dropout rates for secondary ELLs have consistently been higher than the district average. It was determined that some type of instructional support for secondary ELLs might alleviate this problem, and Sheltered Instruction was chosen as the intervention.

Under this initiative, training was provided in 2009–2010 by representatives of Pearson, Inc., which owns the copyright to the SIOP name and methodology. Training was provided to campus administrators, and to 23 ESL content specialists (who were assigned to work with specific feeder patterns in the district). SIOP training was also provided to selected secondary content teachers, primarily in reading, mathematics, and science.

During 2010–2011, the implementation of SIOP training was modified in the following ways. First, there were no outside representatives from Pearson, Inc. involved in any SIOP train-

ing. Almost all SIOP trainings relied on district staff (secondary special populations specialists) who had previously received training. The sole exception was a one-day session in January for new secondary content teachers. Second, the day-to-day responsibilities of these specialists were under the administrative control of the district's various school improvement officers. In a number of cases, these specialists were not utilized to provide SIOP training since it was determined that other priorities existed.

### Program Goals

The goal of this initiative was to enhance the comprehensibility of English language instruction for ELL students through the use of SIOP strategies in the district's secondary schools. This should result in improved academic outcomes for secondary ELL students, as indicated by their performance on standardized assessments (i.e., TAKS, Stanford 10, TELPAS), and, eventually, by reduced dropout and increased graduation rates.

### Purpose of the Evaluation Report

The purpose of this report was to examine the impact of the SIOP Professional Development Initiative. Specifically, to assess whether teachers who went through SIOP training were applying SIOP principles, to document reaction to the training received, and to assess whether there was any measurable impact on the academic performance of secondary ESL students who were taught by these SIOP-trained teachers.

### Research Questions

1. What was the demographic profile of teachers who received SIOP training?
2. What was the level of satisfaction of teachers with the SIOP training they received?
3. How effectively was sheltered instruction implemented by the teachers who attended training?

4. What was the impact of SIOP training on the academic performance of students in classes taught by the selected teachers?
5. What was the impact of SIOP training on English proficiency of students in classes taught by the selected teachers?

### **Literature Review**

Sheltered instruction is a style of teaching which makes grade-level academic content in core areas (e.g., math, science, social studies) more accessible for English Language Learners (ELLs), while at the same time promoting development of English language proficiency. It highlights key language features and incorporates strategies to make content more comprehensible to students. Sheltered instruction is sometimes referred to as SDAIE (specially designed academic instruction in English). While use of sheltered instruction techniques has come to be widespread in U.S. schools, this growth has often been characterized by inconsistent practices from district to district, and even from class to class within the same school (August & Hakuta, 1997; Berman et al, 1994; Kaufman, et al., 1994; Sheppard, 1995; Short, 1998)

Arguably, the most popular version currently in use is the sheltered instruction observational protocol, or SIOP (Echevarria & Graves, 1998; Echevarria, Vogt, & Short, 2000). The SIOP model was developed in a seven-year national research project (1996-2003) sponsored by the Center for Research on Education, Diversity, and Excellence (CREDE). Researchers identified features of instruction present in high-quality sheltered lessons, and developed an observational tool consisting of 30 items grouped into three sections: *preparation*, *instruction*, and *review/evaluation*. The instruction component is further broken down into clusters of items dealing with *building background*, *comprehensible input*, *strategies*, *interaction*, *practice/application*, and *lesson delivery*.

All features of the SIOP model are aligned with current research on instruction for ELLs. SIOP was originally designed to be used as an observation and rating tool for researchers, but it

was soon recognized that the instrument could be used by teachers for lesson planning and reflection. Some of the techniques and strategies which SIOP encourages include the following:

- use of supplemental materials,
- adapt content to level of student proficiency,
- link concepts to student background and experiences,
- link past learning and new concepts,
- use scaffolding techniques,
- allow for frequent interactions between student-teacher and among students,
- use hands-on materials or manipulatives, and
- provide activities that integrate all language skills (reading, writing, listening, speaking).

Research has shown that the SIOP model is effective for learners at all grade levels across many subject areas, and can impact student achievement (Echevarria, Vogt, & Short, 2004).

An evaluation of SIOP training carried out in the district in the first year of this initiative (Houston Independent School District, 2010) found mixed results. Specifically, ESL students whose English or mathematics teachers received SIOP training showed statistically larger improvements in performance on the Stanford 10 and English TAKS than did ESL students whose teachers received no such training. However, this was the case only for campuses where SIOP training occurred on a campus-wide basis. In other words, if an entire department of teachers received SIOP training, students appeared to benefit. Otherwise, SIOP training had no measurable effect on student performance.

### **Methods**

#### **Data Collection**

The first data collected consisted of a list of teachers receiving SIOP training. These data were provided by the Multilingual Department. Next, employee ID codes for these teachers were retrieved from the district's Chancery database in order to gather a full list of classes taught by those teachers.

Next, teacher demographic information was extracted from Chancery, including years of teaching experience. In addition, a list was created of all students in classes taught by SIOP teachers. This list was then used to retrieve student performance data on various standardized tests (see below).

Two surveys were used to collect data from teachers, as well as other staff who received SIOP training. The first of these was a satisfaction survey, which sought feedback from the three tiers of SIOP attendees on their reactions to the training, what their experiences had been, what had worked, and what had not. A copy of this online survey, along with responses, is shown in **Appendix A**.

There was also a survey administered to all teachers concerning SIOP implementation. It contained questions concerning the ease of implementing SIOP methods in the classroom (**Appendix B**), as well as questions concerning their use of specific SIOP strategies (**Appendix C**). For this report, teachers completed both surveys online at the end of the school year, and were instructed to base their answers on their overall use of sheltered instruction methods during the school year. Appendices B and C also include subject responses to survey questions.

Student performance data were collected from the Stanford Achievement Test (Stanford 10), the Texas Assessment of Knowledge and Skills (TAKS), and the Texas English Language Proficiency Assessment System (TELPAS). Data were calculated for all ESL students who were in classes taught by teachers who received SIOP training. Data for all other ESL students in the district served as a comparison.

Student and teacher demographic data, as well as other information (e.g., campus, program, etc.) were obtained from the district's Chancery database.

### Assessment Instruments

The Stanford 10 is a norm-referenced, standardized achievement test in English used to assess students' level of content mastery. The reading, mathematics, language, science, and social science results for the Stanford 10 are included.

Reported are mean Normal Curve Equivalent (NCE) scores for each subject. The NCE is a normalized standard score most often used when interpolating or averaging scores. Like the National Percentile Rank (NPR), the NCE is a norm-referenced score, but in contrast to the NPR, the NCE provides an equal-interval scale that allows computations such as averaging or subtraction, which are useful when studying academic progress over time, especially when comparing different subject areas or student groups.

The TAKS is a state-mandated, criterion-referenced test administered for the first time in spring 2003 as a means to monitor student performance. The English language version measures academic achievement in reading at grades 3–9; English language arts at 10 and 11; writing at grades 4 and 7; social studies at grades 8, 10, and 11; and science at grades 5, 8, 10, and 11. Students in the 11th grade are required to take and pass an exit-level TAKS in order to graduate. For the purposes of this report, only English language assessments were of interest. Thus, no data from the Spanish language version of TAKS are included. Data reported are the percent of students who passed (met standard) on the reading and math subtests.

The final student assessment used was the TELPAS. On the TELPAS, ELL students in kindergarten through twelfth grade are assessed in four language domains: listening, speaking, reading, and writing. Proficiency scores in each domain fall into one of four proficiency levels: Beginning, Intermediate, Advanced, and Advanced High. Included in this report are two measures, the percentage of ELL students scoring at the Advanced High level of English proficiency, and the percentage of who made progress in proficiency between 2010 and 2011.

### Qualitative Data Collection

Informal interviews with key stakeholders were conducted to gather information on program goals, objectives, and activities. Included were staff from the Multilingual Department, a sample of the secondary special population specialists, and school staff including teachers.

Table 1. Number of Content Area Teachers Trained in SIOP 2010–2011, by Campus

Campus	English	Math	Science	Other	Total
9 <sup>th</sup> Grade Prep	9	7	2	13	31
Chavez HS	1	6	0	1	8
Davis HS	6	11	4	28	49
Madison HS	1	0	0	3	4
Reagan HS	3	1	1	5	10
St. George Place	5	3	3	0	8 <sup>a</sup>
Westbury HS	4	13	3	15	35
Westside HS	3	1	0	1	5
Wheatley HS	4	4	3	20	31
<b>Total</b>	<b>36</b>	<b>46</b>	<b>16</b>	<b>86</b>	<b>181</b>

a: Some teachers taught multiple subjects

Source: Training Logs, Chancery

## Results

### What was the demographic profile of teachers who received SIOP training?

A total of 414 teachers received SIOP training in 2010–2011. However, 233 of these teachers attended a single session lasting approximately 60-90 minutes in August of 2010, with no follow-up training. The remaining 181 teachers received some form of ongoing training and/or consultation, either meeting with the secondary special population specialists or attending multiple training sessions held on their campuses. These 181 teachers were the focus of this report, since it was felt that the training offered to the single-session teachers was too limited to expect much impact on student achievement.

By subject area, 36 teachers taught English or English Language Arts, 46 taught math, and 16 taught science. An additional 86 teachers who

received SIOP training taught none of these subjects, and were classified as “other.” Counts of teachers by subject and campus are shown in **Table 1**. Note that there was a wide range among the campuses in terms of the number of teachers who were trained. **Appendix D** provides a count of teachers who attended the single-session training by campus.

Sixty-six percent of teachers receiving SIOP training were female and 34 percent male. The mean age of teachers receiving training was 41.8 years (median = 40 years). **Figure 1** shows the distribution of ages for teachers who received SIOP training (shaded bars). Also included for comparison is the relative distribution of ages for teachers in the district (open circles). Note that the distribution of SIOP-trained teachers is slightly skewed toward those who were 25 years old or less. This difference in the distribution of teacher ages was statistically significant ( $\chi^2 = 272.1$ ,  $p < .0001$ ). Thus, the teachers receiving

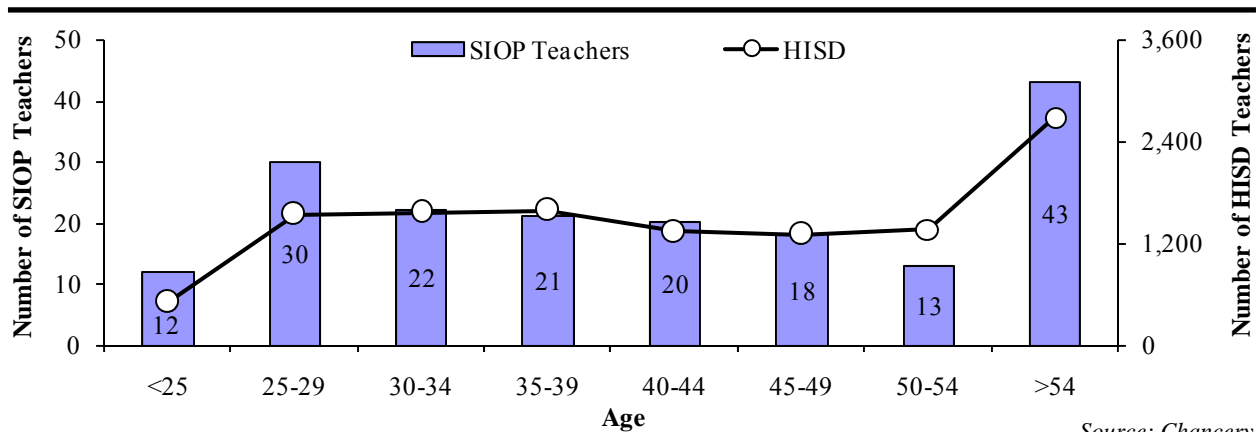
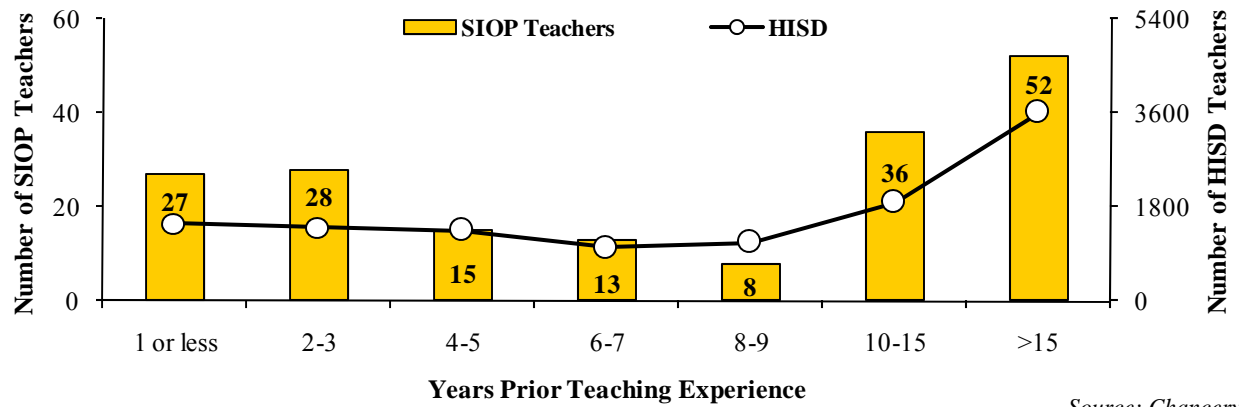


Figure 1. Distribution of SIOP-trained teachers by age.



Source: Chancery

Figure 2. Distribution of SIOP-trained teachers by years of previous experience teaching overall.

SIOP training tended to be disproportionately younger than expected based on the HISD teacher population, although teachers across the whole age range participated in SIOP training.

The average amount of prior teaching experience for SIOP teachers was 12.0 years (median = 9 years). **Figure 2** shows the distribution of prior experience. As with the previous figure, data for all district teachers are included for comparison (open circles). Note the relatively large number of SIOP teachers with one or fewer prior years of teaching experience in comparison with all teachers districtwide. This difference was also statistically significant ( $\chi^2 = 3.91$ ,  $p < .05$ ).

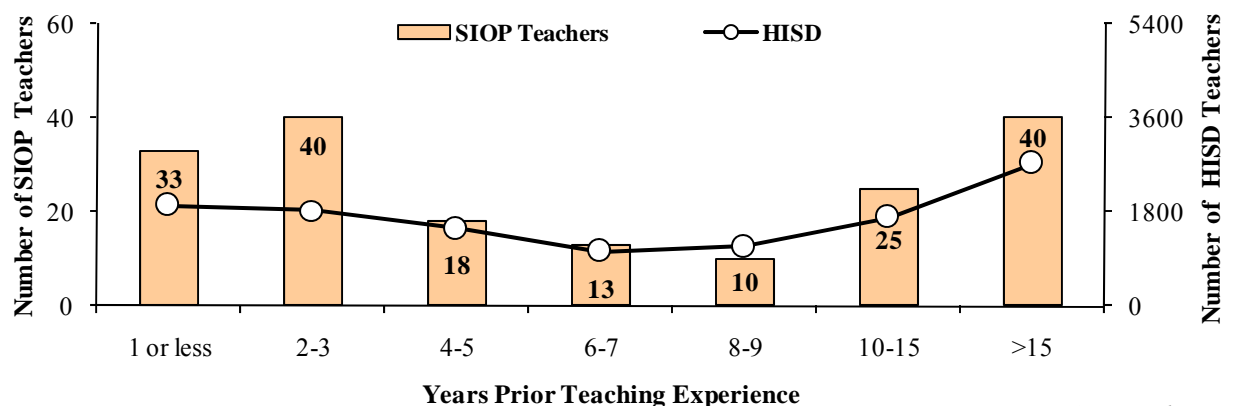
The skew in distribution of experience-level of teachers receiving SIOP training relative to that of district teachers can be seen even more clearly in **Figure 3**. This shows the distribution of HISD teaching experience. It is clear that the

teachers getting SIOP training are disproportionately among those who have taught the least in the district ( $\chi^2 = 7.87$ ,  $p < .006$ ).

#### What was the level of satisfaction of teachers with the SIOP training they received?

Twenty of the 181 individuals who had attended SIOP training responded to an online survey assessing reaction to the training sessions. All twenty respondents were high school teachers. Of the teachers, five taught math, four taught science, six taught reading or English language arts, and eight taught other subjects. Two teachers taught multiple subjects and the remaining teachers only one subject each (hence the total is greater than 20).

Opinions about the trainers were highly positive, with 80 percent or more either agreeing or strongly agreeing with the following statements:



Source: Chancery

Figure 3. Distribution of SIOP-trained teachers by years of previous experience teaching in HISD.

“adequately set the tone and background for information presented” (85%), “actively encouraged collaborative discussion” (80%), and “helped me to make connections with the information so that I could use it in my teaching” (80%).

There were also twelve questions querying attendee’s reactions to the sessions themselves. A full summary of responses to the entire survey can be found in **Appendix A**. Statements which received the highest degree of support were the following: “the information was conveyed in a way that was easy to comprehend and follow” (85%), “my awareness of sheltered instruction practices was enhanced” (85%), “the topics were well organized and well paced” (80%), and “the information was relevant and useful to my daily work” (80%). The question showing the lowest level of agreement was “the learning outcomes for the sessions were clearly communicated,” with 70% either agreeing or strongly agreeing. Overall, responses to this survey indicated a high degree of satisfaction with the training, with 78% of responses being positive.

### **How effectively was sheltered instruction implemented by the teachers who attended training?**

The effectiveness of SIOP implementation was assessed via a 38-item online survey completed by teachers who had attended the SIOP training sessions (only 13 teachers responded). The first eight items in the survey concerned degree of difficulty faced when trying to implement SIOP methods in their classrooms (see **Appendix B**). In comparison with the previous survey concerning the reactions to the original training they received, attitudes towards implementation of SIOP were less positive.

The most positive responses were to the item “things I learned in SIOP training were easily implemented in the classroom” (75%). Teachers also reported observing positive benefits for students after using SIOP strategies in their classroom (70%). Positive reaction fell off quickly after this, particularly to those survey items that concerned support or assistance they had re-

ceived; “ongoing support was available when I had questions or concerns” (54% agreement), “other district staff facilitated my use of SIOP” (58%), and “principals and other administrators facilitated my use of SIOP” (39%). Nearly half of teachers (46%) felt that including SIOP strategies in their teaching increased their workload.

The final 30 items in the survey were the same items used in the SIOP observational tool (see p. 4). Summary data are shown in **Appendix C**, and items are organized into the following sections: *preparation*, *building background*, *comprehensible input*, *strategies*, *interaction*, *practice/application*, *lesson delivery*, and *review/assessment*.

Overall, SIOP methods appeared to have been implemented fairly broadly. For five of the eight categories of survey items, more than 90% of respondents indicated that they implemented the SIOP methods described either “usually” or “always.” The remaining three categories of items were implemented “usually” or “always” by between 78 and 86 percent of teachers surveyed.

Areas that showed the most frequent implementation were “providing comprehensible input” (e.g., using speech appropriate for student proficiency level, explaining academic tasks clearly, and using a variety of techniques to make concepts clear), “interaction” (e.g., using group configurations that supported the language and content objectives, and giving students opportunities to clarify key concepts in their primary language), and “lesson delivery” (e.g., pacing lessons to student ability level, supporting content and language objectives clearly, engaging students 90-100% of the time).

Methods less frequently used were those concerning “building background” (e.g., linking concepts to students’ backgrounds/experiences, linking past learning and new concepts, and emphasizing key vocabulary), as well as “preparation” (e.g., adapting content to level of proficiency of all students, writing content and language objectives clearly).

To summarize, while reactions to the SIOP trainings were positive, implementation of SIOP

strategies in the classroom sometimes proved to be problematic. Most individual components of SIOP were implemented fairly frequently by teachers. However, certain aspects of SIOP were used less often, and teachers expressed concern about the amount of continuing support available to them.

### What was the impact of SIOP training on the academic performance of students in classes taught by the selected teachers?

#### Stanford 10

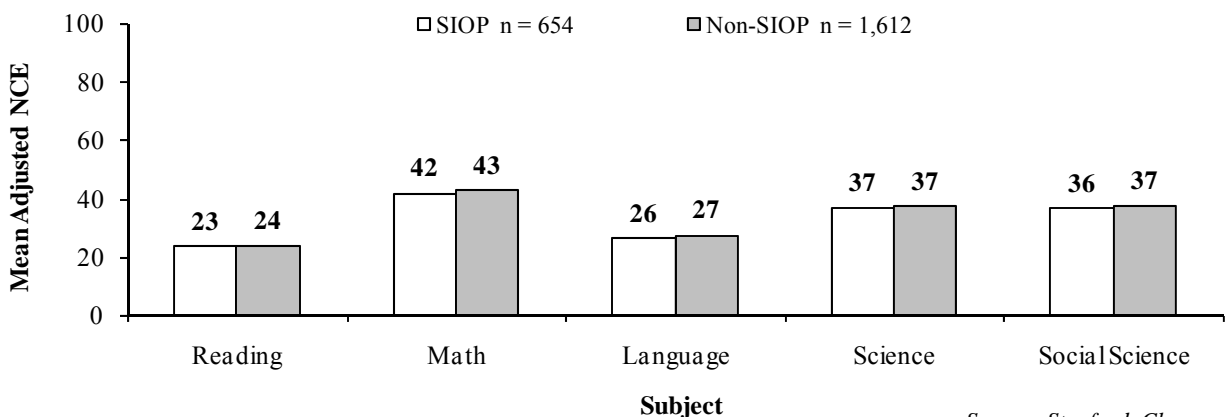
**Figure 4** shows results for ESL students whose content teachers (reading/ELA, mathematics, or science) received SIOP training. Also included for comparison purposes are results for ESL students in the district whose teachers did not receive SIOP training in 2010–2011 or the previous year. Results are limited to students in grades 9 through 11, since SIOP teachers identified were all at the high-school level. Results for the reading, math, language, science, and social science tests are included.

Statistical analyses were conducted on these data as follows. First, analysis was limited to only those students (either in the SIOP group or the non-SIOP ESL group) who had valid Stanford 10 scores in all five subject areas (reading, math, language, science, and social science) for both 2010 and 2011. For these samples ( $n = 654$  for SIOP, and 1,612 for the comparison group), a

multivariate analysis of covariance (MANCOVA) was conducted. The dependent variables were the 2011 Stanford NCEs for the reading, mathematics, language, science, and social science subtests, and covariates were the five corresponding 2010 Stanford NCE scores for these same subtests. The independent variable was group (SIOP vs. non-SIOP). The main objective of this analysis was to determine whether SIOP students differed from non-SIOP students in terms of their Stanford 10 scores, after controlling for their pre-test performance.

Results of this multivariate analysis showed that the overall difference between the two student groups was not significant,  $F_{5, 2255} = 1.26$ ,  $p = .26$ , Wilkes Lambda = .997, partial eta-squared = .003. When results of the five Stanford subtests were considered separately, only one reached statistical significance: language,  $F_{1, 2265} = 4.25$ ,  $p = .039$ . Effect size was small (partial eta-squared = .002), and in fact the effect was in the opposite direction to that predicted, with the SIOP group having lower overall adjusted NCE scores. Adjusted mean NCE scores (see Figure 4) showed that the SIOP group did not outperform the non-SIOP group in any subtest of the Stanford 10.

Thus, there did not appear to be any performance advantage on the Stanford 10 for students whose teachers had received SIOP training in 2010–2011. This is in contrast with results from an evaluation of SIOP training in the dis-



Source: Stanford, Chancery

Figure 4. Mean adjusted Stanford 10 NCE scores for students of SIOP-trained teachers (white bars), and ESL students whose teachers did not receive SIOP training (shaded bars).

strict conducted last year, where some positive impact was observed.

### English TAKS

**Figure 5** shows TAKS results for ESL students whose English teachers received SIOP training. Data reflect the mean change in percentage of students passing the TAKS from 2010 to 2011. As with the Stanford results, TAKS data are only shown for students with valid TAKS results from both 2010 and 2011. Only reading/ELA and math TAKS data are included. This is because the writing, science, and social studies TAKS tests are not given at all grade levels, unlike the case for reading/ELA and math. Since analyses are limited to students having valid test results from two consecutive years, this would have resulted in insufficient data being available for those subtests.

For this group of students, results show that the ESL students of SIOP teachers showed larger gains in TAKS reading passing rates than ESL students whose teachers did not receive SIOP training. The mean gain in passing rate percentage in reading was 15.0 points for the SIOP students, compared to 7.2 points for the non-SIOP students. This difference was statistically significant,  $\chi^2 = 2.86$ ,  $p < .05$ .

Mathematics results are shown on the right of Figure 5. The mean gain in passing rate percentage in mathematics was 7.4 points for the SIOP students, compared to 6.1 points for the

non-SIOP students. This difference was not statistically significant,  $\chi^2 = 0.02$ ,  $p > .43$ .

In conclusion, the pattern of results with TAKS was not the same as that seen with the Stanford 10. Specifically, analysis of TAKS results indicated a significantly greater gain in TAKS passing rate on the reading test for SIOP students compared to non-SIOP students. On the Stanford 10, however, there was no advantage for SIOP students on any of the subtests.

### What was the impact of SIOP training on English proficiency of students in classes taught by the selected teachers?

English proficiency for ELL students was assessed using the TELPAS. **Figure 6** (see p. 11) summarizes data from SIOP students and the non-SIOP comparison group. The left side of Figure 6 shows the percentage of students tested who had TELPAS proficiency scores of Advanced High. The percentages were virtually identical for the SIOP (34%) and Non-SIOP groups (35%), and the difference was not statistically significant,  $\chi^2 = 0.11$ ,  $p > .37$ .

The right side of Figure 6 shows the percentage of students in each group who made at least one level of progress in English language proficiency on the TELPAS between 2010 and 2011. Fifty-eight percent of SIOP students made progress, compared to 54% for the non-SIOP group. This difference was significant,  $\chi^2 = 4.80$ ,  $p < .02$ .

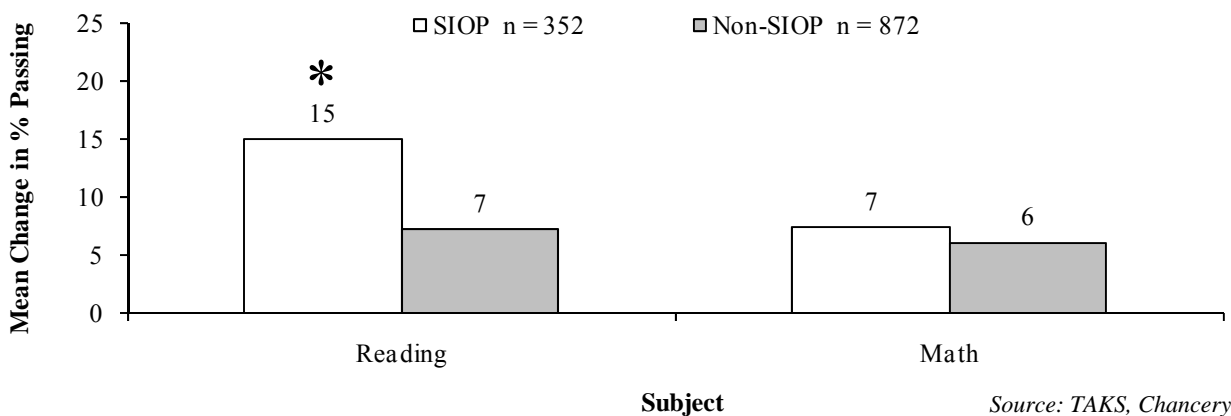


Figure 5. TAKS summary data for students of SIOP-trained teachers (white bars) and non-SIOP trained (shaded bars). Data are mean gain in percent passing from 2010 to 2011, by subject.

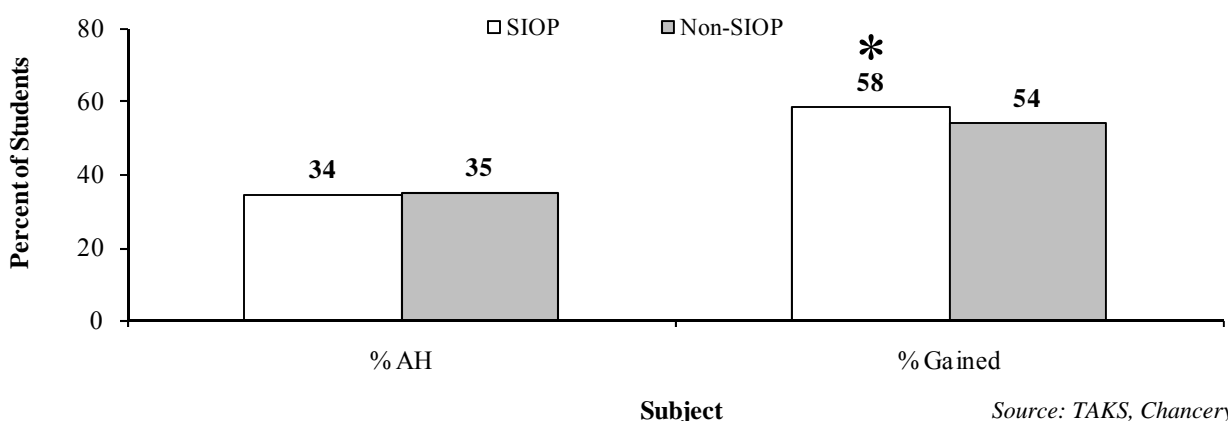


Figure 6. TELPAS data for students of SIOP-trained (white bars) and non-SIOP trained teachers (shaded bars). Data are percent scoring Advanced High, and percent who gained in proficiency.

## Conclusions

The goal of the SIOP Professional Development Initiative was to provide Sheltered Instruction Observation Protocol (SIOP) training to secondary-level content teachers in the district. SIOP training was provided to secondary content teachers in reading, mathematics, and science, as well as to teachers of other subjects. This report summarizes the impact of that training. Surveys were used to assess teachers' reactions to the training sessions, as well as their feelings regarding implementation of SIOP. In addition, student performance data were collected in the form of Stanford 10, TAKS, and TELPAS results.

Four-hundred fourteen teachers received SIOP training, with 181 of these receiving ongoing consultation and/or multiple training sessions. SIOP training for district teachers may have been less comprehensive in 2010–2011 than in the previous year, for two reasons. One is that (with one exception) outside trainers were not utilized this past year, and instead SIOP trainings relied on staff (i.e., secondary special populations specialists) who had received training previously. In addition, these specialists were under the administrative control of the district's school improvement officers, who often used the specialists for other purposes since it was deemed that other priorities took precedence.

Reactions to the SIOP training sessions were positive overall, indicating a high degree of sat-

isfaction with the training. However, teachers expressed some difficulty with the actual implementation of SIOP strategies in their classrooms, and expressed concern about the amount of ongoing support they received from either district staff or their own principals and administrators. While most individual components of SIOP were implemented fairly frequently, some strategies were used less often (e.g., adapting content to level of proficiency of all students, writing content and language objectives clearly, and linking concepts to students' backgrounds and experiences).

Student performance data were also analyzed. On the Stanford 10, there was no evidence that students of SIOP-trained teachers made gains in performance over the previous year that were any greater than those shown by non-SIOP trained ESL students. This was true for all subject areas tested. However, on the English TAKS, students of SIOP teachers did show a significantly greater improvement in passing rate for reading than did the comparison group. This was not the case for mathematics. Thus, there was at least some evidence that SIOP had beneficial effects on the reading performance of ELL students.

Finally, ESL students whose teachers went through SIOP training did not show higher overall English language proficiency than did ESL students from the comparison group. However, a higher percentage of the SIOP students made

gains in English language proficiency between 2010 and 2011 than did the non-SIOP students. In summary, SIOP training for teachers resulted in some significant positive benefits for ESL students they taught.

### Recommendations

1. The district should attempt to retain outside trainers for SIOP on some regular schedule. In 2010–2011, the strategy was to use previously trained district staff to provide SIOP training to teachers. Staff turnover may be an issue, however, and finding staff who have the necessary expertise in SIOP might become more difficult over time. The district and Multilingual Department should strive to set a schedule whereby appropriate outside consultants are used by the district, perhaps on a rotating basis (every 2-3 years).
2. SIOP training should be more formally implemented and done in a systematic way. In 2010–2011, the specialists who were to provide the SIOP training were often assigned other tasks by their respective SIOs, based on perceived needs or priorities. Districtwide SIOP training suffered as a result. If this or a similar arrangement is repeated in the future, it will again prove difficult to provide comprehensive SIOP training to district teachers.
3. Feedback from teachers who completed the year-end survey suggested that ongoing support from administrators was lacking. This same result was obtained in the previous year's evaluation of SIOP. Once again, it is recommended that efforts are made to provide more ongoing support for teachers in the implementation of SIOP strategies.

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## Appendix A

Questions and responses from online survey administered to SIOP training participants.

Items concerning the trainers/facilitators:					
Survey Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Adequately set the tone and background for information presented in the session(s)	55% (11)	30% (6)	5% (1)	5% (1)	5% (1)
Allowed me to reflect and share my ideas/views about the topics presented	47% (9)	26% (5)	21% (4)	0% (0)	5% (1)
Helped me to make connections with the information so that I could use it in my teaching	45% (9)	35% (7)	15% (3)	0% (0)	5% (1)
Actively encouraged collaborative discussion	55% (11)	25% (5)	15% (3)	0% (0)	5% (1)

Items concerning the sessions themselves:					
Survey Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The topics were well organized and well paced	35% (7)	45% (9)	5% (1)	15% (3)	0% (0)
The learning outcomes for the sessions were clearly communicated	45% (9)	25% (5)	20% (4)	10% (2)	0% (0)
The information was relevant and useful to my daily teaching/work	30% (6)	50% (10)	10% (2)	5% (1)	5% (1)
The information was conveyed in a way that was easy to comprehend and follow	40% (8)	45% (9)	10% (2)	5% (1)	0% (0)
I feel comfortable enough with the information I learned that I could share it with my colleagues	32% (6)	47% (9)	11% (2)	11% (2)	0% (0)
Overall, the session was relevant to my teaching/work within the school	40% (8)	35% (7)	20% (4)	0% (0)	5% (1)
I have a clearer understanding of how sheltered instruction can be used in my teaching	35% (7)	40% (8)	15% (3)	5% (1)	5% (1)
Handouts were useful and adequately supported the information presented	40% (8)	35% (7)	15% (3)	10% (2)	0% (0)
My awareness of sheltered instruction practices was enhanced	35% (7)	50% (10)	10% (2)	0% (0)	5% (1)
I have enough information to move forward with sheltered instruction	35% (7)	40% (8)	20% (4)	5% (1)	0% (0)

## Appendix B

Questions and responses from online survey administered for SIOP teachers concerning the overall ease of implementing SIOP strategies in their classroom.

How easy was it to use SIOP methods in the classroom?					
Survey Item	Strongly Agree	Agree	Neutral	Disagree	Stringly Disagree
Things I learned during SIOP training were easily implemented in the classroom	33% (4)	42% (5)	17% (2)	0% (0)	8% (1)
I observed positive benefits for students after using SIOP strategies in my classroom	8% (1)	62% (8)	23% (3)	0% (0)	8% (1)
Other district staff (teachers, curriculum specialists, etc.) facilitated my use of SIOP	8% (1)	50% (6)	17% (2)	17% (2)	8% (1)
Students appeared to like the inclusion of SIOP strategies in my classroom	15% (2)	39% (5)	31% (4)	8% (1)	8% (1)
Ongoing support was available when I had questions or concerns	0% (0)	54% (7)	23% (3)	8% (1)	15% (2)
Including SIOP strategies in my teaching increased my workload	15% (2)	31% (4)	8% (1)	31% (4)	15% (2)
Principals and other administrators facilitated my use of SIOP	8% (1)	31% (4)	39% (5)	15% (2)	8% (1)
Unexpected duties or tasks which came up during the year interfered with my ability to implement sheltered instruction	8% (1)	15% (2)	23% (3)	39% (5)	15% (2)

## Appendix C

Questions and responses from online survey administered to SIOP teachers concerning implementation of specific SIOP strategies.

Survey Item	Always	Usually	Sometimes	Seldom	Never
<b>Preparation:</b>					
Identify supplemental materials to use (graphs, models, visuals)	50% (6)	50% (6)	0% (0)	0% (0)	0% (0)
Choose content concepts appropriate for age and educational background level	50% (6)	33% (4)	17% (2)	3% (0)	0% (0)
Plan meaningful activities and integrate lesson concepts with language practice opportunities for the four skills	50% (6)	33% (4)	8% (1)	8% (1)	0% (0)
Adapt content (e.g., text, assignment) to all levels of students proficiency	42% (5)	33% (4)	25% (3)	0% (0)	0% (0)
Write content objectives clearly for students	33% (4)	33% (4)	33% (4)	0% (0)	0% (0)
Write language objectives clearly for students	25% (3)	33% (4)	42% (5)	0% (0)	0% (0)
<b>Building Background:</b>					
Emphasize key vocabulary for students (e.g., introduce, write, repeat, and highlight)	42% (5)	50% (6)	8% (1)	0% (0)	0% (0)
Explicitly link past learning and new concepts	50% (6)	25% (3)	25% (3)	0% (0)	0% (0)
Explicitly link concepts to students' backgrounds and experiences	50% (6)	17% (2)	25% (3)	8% (1)	0% (0)
<b>Comprehensible Input:</b>					
Use a variety of techniques to make concepts clear (e.g., models, visuals, hands on activities, demonstrations, gestures)	67% (8)	33% (4)	0% (0)	0% (0)	0% (0)
Explain academic tasks clearly	75% (9)	17% (2)	8% (1)	0% (0)	0% (0)
Use speech appropriate for students' proficiency level	50% (6)	42% (5)	8% (1)	0% (0)	0% (0)
<b>Strategies:</b>					
Use a variety of question types including those that promote higher-order thinking skills throughout the lesson	33% (4)	67% (8)	0% (0)	0% (0)	0% (0)
Provide ample opportunities for students to use strategies (e.g., problem solving, predicting, organizing, summarizing)	58% (7)	33% (4)	8% (1)	0% (0)	0% (0)
Use scaffolding techniques consistently throughout the lesson	17% (2)	50% (6)	33% (4)	0% (0)	0% (0)

### Appendix C (cont.)

Survey Item	Always	Usually	Sometimes	Seldom	Never
<b>Interaction:</b>					
Provide sufficient wait time for student responses consistently	67% (8)	33% (4)	0% (0)	0% (0)	0% (0)
Provide frequent opportunities for interactions and discussions between teacher/student and among students, and encourage elaborated responses	73% (8)	27% (3)	0% (0)	0% (0)	0% (0)
Use group configurations that support language and content objectives of the lesson	75% (9)	17% (2)	8% (1)	0% (0)	0% (0)
Give ample opportunities for students to clarify key concepts in L1 as needed with aide, peer, or L1 text	25% (3)	58% (7)	17% (2)	0% (0)	0% (0)
<b>Practice/Application:</b>					
Provide activities for students to apply content and language knowledge in the classroom	73% (8)	18% (2)	9% (1)	0% (0)	0% (0)
Provide hands-on materials and/or manipulatives for students to practice using new content knowledge	73% (8)	18% (2)	9% (1)	0% (0)	0% (0)
Provide activities that integrate all language skills (reading, writing, listening, speaking)	64% (7)	27% (3)	9% (1)	0% (0)	0% (0)
<b>Lesson Delivery:</b>					
Pace the lesson appropriately to the students' ability level	46% (5)	55% (6)	0% (0)	0% (0)	0% (0)
Engage students approximately 90-100% of the time (most student staking part/on task)	55% (6)	46% (5)	0% (0)	0% (0)	0% (0)
Support content objectives clearly	73% (8)	18% (2)	9% (1)	0% (0)	0% (0)
Support language objectives clearly	73% (8)	9% (1)	18% (2)	0% (0)	0% (0)
<b>Review/Assessment:</b>					
Give a comprehensive review of key content concepts	55% (6)	46% (5)	0% (0)	0% (0)	0% (0)
Provide feedback to students regularly on their output (language, content, work)	64% (7)	27% (3)	9% (1)	0% (0)	0% (0)
Give a comprehensive review of key vocabulary	36% (4)	55% (6)	9% (1)	0% (0)	0% (0)
Conduct assessments of student comprehension and learning throughout lesson on all objectives	40% (4)	40% (4)	20% (2)	0% (0)	0% (0)

**Appendix D Campuses with single-session (60-90 minutes) SIOP training**

<b>Campus</b>	<b># Teachers</b>	<b>Campus</b>	<b># Teachers</b>	<b>Campus</b>	<b># Teachers</b>
Alcott	1	Garcia	3	Park Place	5
Almeda	2	Garden Oaks	1	Patterson	1
Askew	1	Garden Villas	1	Peck	1
Barrick	1	Gregg	5	Petersen	3
Bell	2	Grissom	4	Pilgrim	1
Benavidez	8	Helms	1	Pilgrim Academy	2
Benbrook	6	Herrera	2	Piney Point	2
Berry	2	Highland Heights	3	Port Houston	2
Bonham	7	Janowski	3	R Martinez	4
Brookline	1	Jefferson	1	R. Martinez	1
Browning	1	Jordan	1	Robinson	2
Burbank ES	3	JP Henderson	8	RP Harris	1
Burnet	3	JR Harris	4	Rucker	2
C Martinez	1	Kelso	6	Sanchez	3
Cook	1	kennedy	3	Scarborough ES	6
Coop	4	Ketelsen	4	Scroggins	3
Crespo	5	Lantrip	1	Seguin	7
Davila	3	Law	1	Shearn	7
DeChaumes	2	Lewis	6	Southmayd	5
Dezavela	2	Looscan	7	Stevens	3
Dogan	1	Love	4	Sutton	7
Durkee	4	Lyons	3	Thompson	1
Eliot	2	Mading	1	Tijerina	1
Emerson	2	McNamara	1	Twain	4
Franklin	3	Montgomery	3	Wainwright	1
Frost	1	Moreno	2	Windsor Village	3
Gallegos	2	Northline	4		