

**Using SIOP and Standards Based Grading Methods to Reduce the  
Achievement Gap**

**Observation Write-Up**

**Instructional Leadership EDLPS 571 A**

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by

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The focus of this document is about classroom strategies that can be implemented to help close the achievement gap within the Bellingham School District. I will highlight the SIOP (sheltered instruction observation protocol) Model instructional strategies that were observed in a high school geometry lesson along with standards based grading strategies that are currently making a difference for the students in the observed class. An emphasis will be placed on the SIOP strategies which each teacher at Sehome High School will receive the same training this year. I was one of three teachers from the Math Department that was trained on the SIOP model over a three day period in October, 2012.

The SIOP model is a researched-based and a validated model of sheltered instruction that has been proven effective in addressing the academic needs of English learners throughout the United States. This model helps teachers to plan and deliver lessons that allow English learners to acquire academic knowledge as they develop English language proficiency. The SIOP was originally designed as an observation and rating tool for the researchers to use while viewing the participating teachers in the classroom. During the course of the project, however, the participating teachers discovered its potential as a tool for lesson planning and reflection. As the number of English learners increases in schools across the United States, educators are seeking effective ways to help them succeed in K-12 ESL, content area, and bilingual classrooms. Research shows that when teachers fully implement the SIOP Model, English learners' academic performance improves. In addition, teachers report that SIOP-based teaching benefits all students, not just those who are learning English as an additional language.

The SIOP Model consists of eight interrelated components:

- Lesson Preparation
- Building Background
- Comprehensible Input
- Strategies
- Interaction

- Practice/Application
- Lesson Delivery
- Review/Assessment

Using instructional strategies connected to each of these components, teachers are able to design and deliver lessons that address the academic and linguistic needs of all diverse learners in their classrooms.

During the classroom observation, I was able to see evidence of all eight components used within the lesson. The class I observed on Thursday, November 15, 2012, was a 6<sup>th</sup> period Geometry class with 27 students, comprised of freshman and sophomore students. There were six students out of the 27 that appeared to be non-Caucasian. The freshmen students are advanced by one year and sophomores are on track for the average sophomore student. The teacher, Ms. Dryer, was one of the three math teachers who were trained on the SIOP model two weeks before the observation. The week prior to the observation, each of the Sehome High School teachers who were trained on the SIOP modeled used an early release to collaborate and discuss the strategies they started implementing in their classes, and share their goals for continued implementation and growth. Ms. Dryer shared that her goal was to intentionally incorporate and communicate language goals each day along with her math content goals. She also shared that she intended to increase student involvement, student discourse, and develop their communication skills in each lesson.

The sixth period class I observed was on a 75-minute block schedule that day. The class began at 1:00 pm and ended at 2:15 pm. I used a simple recording sheet, which contained four columns to jot down each of my observations. The column headings were “time”, “teacher observations”, “student observations”, and the last column was for my questions or thoughts that I wanted to address at another time. The class was using the CPM (College Preparatory Mathematics) curriculum. The teacher is new this year to the district but has been teaching for the last seven years at a nearby district and has changed districts to teach closer to her home. She has been trained on the CPM materials and has used them the last two years.

I entered the classroom at 1:05 and sat in the back. Students were sitting at tables facing forward with two students at each table. Ms. Dryer was walking around the room stamping each student's homework recording sheet to verify if their homework assignment was complete. Students were given directions on the projector that stated "Check 3-5 through 3-9". The following questions were also on the overhead:

- "Are there any problems that you need to go back and revise?"
- "Which ones?"

Ms. Dryer had brief discussions with students about the assignment as she quickly went around the room stamping their sheets. She made the comment "If you haven't done the homework, than you do it now." Several students had questions for her about what the implications of the late stamp. She explained to them that they could still earn some of the points if they finished the assignment. Ms. Dryer placed answer sheets from the homework on each of the tables and students used them to correct their work. She asked, "Are there any questions that we need to talk about as a whole class?" One student asked, "How do you do number 6b?" "Why do you multiply by....?" Ms. Dryer wrote on the board  $(5x + 9) / 2 = 12$ . She talked about two methods that could be used. She went further into the explanation of the proportion method and showed another example  $5/x = 20/8$ . She emphasized the vocabulary of ratio and proportion, writing those terms on the board as she used them. She continued to refer back to them by pointing to those words on the board as she said them. One student stated, "isn't that called criss-cross?" She replied, "yes, some of you might remember that by the criss-cross apple sauce technique." At this point, one student had his head on his desk and another was texting on his phone. Ms. Dryer commented, "I need your eyes up here to fully engage". As she went on to demonstrate and directed the class by saying "eyes here".

Once the questions from the homework were answered, she placed another slide on the projector. The slide said "Warm-Up. Complete problems 3-17 and 3-18 individually. Be ready to compare answers with the rest of the class in 5 minutes." The time was 1:20. Ms. Dryer told the class, "I will check back with

you at 1:30.” During that time, students were working on those two problems by themselves until about 1:28. Students began speaking to one another, some were talking about the questions, some were engaging in other discussion. Ms. Dryer chose a student’s work at 1:30 and placed it under the document camera. The problem was about enlargement and dilation. She asked, “Can you visualize the rubber band stretching from yesterday?” Students responded as if they did. She drew two right triangles on the board to discuss Proportional Equations. The larger right triangle had sides 15 and 20 while the smaller right triangle had sides 6 and 8. She emphasized similar figures and missing angles. She asked, “Which angle is congruent to which angle?” She added, “Corresponding angles are congruent.” She placed the proportion  $\frac{6}{8} = \frac{15}{20}$  on the board while saying “6 is to 8 as 15 is to 20?” She asked if anyone had a different proportion.

At 1:40, she projected the learning goal for the day, “11/15 Learning Goal: *Learn how to write and solve a proportional equation to find missing side lengths in similar figures.*” The following directions were also projected, “*Working with your table partner, read aloud and complete problems 3-22 through 3-26, be prepared to share your answers with the class in 20 minutes.*” Ms. Dryer stated they had 20 minutes for the 5 problems giving them about 4 minutes per problem. During this time, she continued to walk around the room answering questions and asking probing questions to redirect student’s thinking or get them back on track. She made comments about looking for the zoom factor and looking at the center of the shape. She made comments about tying their learning to what they did yesterday. Students could be heard discussing problems and asking each other questions about the assignment. Students were getting up for rulers or calculators as needed. I observed some students reading aloud to their group, some were reading quietly. Some students were working together and some were working independently. Ms. Dryer continued to go from group to group asking and answering questions. She continued to reinforce the vocabulary of fractions as ratios. Students asked questions about dilations and enlargements.

At 2:00, with 15 minutes left in the class, Ms. Dryer directed the students to get out their composition books to take notes. She demonstrated under the document camera how to fill out the entry on the table of

contents, including the date and title of math content. She placed a sentence starter on a slide that said, “*Figures are similar if \_\_\_\_\_.*” She hinted that “you may want to write something about angles, corresponding, and congruent.” After a minute or two, she placed more on the initial phrase, “*Figures are similar if their corresponding angles are congruent and \_\_\_\_\_.*” She hinted “something about their size.” After another minute, she projected the rest of the sentence: “*and corresponding sides need to be proportional.*” She directed the class to make a picture on their notes showing a proportional equation (she highlighted that phrase), to prove corresponding sides are proportional.

At 2:10, Ms. Dryer passed out the homework sheets for that night. Students looked these over to see if they had any questions and then they began to get cleaned up for the 2:15 class dismissal.

As I looked around the room I noticed on one wall there was a “Word Wall” with current or recently learned vocabulary. These descriptors included pictures to aid students in recalling definitions. The other walls were full of visuals including student work with helpful information on recently learned math skills.

Here is the evidence of the eight SIOP components I observed in this lesson.

- **Lesson Preparation** – Clearly defined lesson objectives, both content and language. The goal for the lesson included a language goal (write a proportional equation) and the learning required reading, writing, and discussion. Language development was observed while students were reading (some aloud and some quietly), writing (in composition books), and discussing their mathematical learning.
- **Building Background** – Making connections to previously learned content, drawing upon classroom experiences.
- **Comprehensible Input** – The teacher frequently used TPR (total physical response) to emphasize key ideas as she was talking, established word wall was clearly visible to increase student understanding and usage of new vocabulary.
- **Strategies** – Teacher changed up activities every 20 minutes or less. Math vocabulary was emphasized multiple times by the teacher verbally, by pointing to the written form, and highlighting to bring students’ attention to these key words.

- **Interaction** – Lesson had a good balance between teacher and student talk. With the design of the lesson, all students were able to interact with the teacher as she spent considerable time moving from group to group making herself available for help. The teacher designed appropriate groups to increase student interaction. She utilized wait time when asking questions during the lesson. Student interaction was observed while they were discussing their mathematical learning.
- **Practice/Application** – Students practiced and applied new learning on classroom and homework assignments. The curriculum materials that were used are designed to have students learning the math concepts conceptually, interacting with other students, and applying their learning to real world problems.
- **Lesson Delivery** – There was evidence of a well planned lesson with no down time, followed clearly defined content and language goals for lesson, students engaged in the learning process, and utilizing strategies for adequate pacing.
- **Review/Assessment** – Skills review occurred during daily warm-up activity, students received verbal feedback as teacher progressed through the room and answered questions and gave individual direction.

In addition to the SIOP Model components that were observed during the lesson, Ms. Dryer also implements other achievement gap closing strategies which ensure her students are progressing toward mastering the necessary skills to be successful in this class and the next. She aligns her curriculum to the Washington State Math Standards and clarifies which standards and skills are to be learned in each unit of study. Student grades are comprised only on their level of performance of mastery on these skills. Her students have multiple opportunities to show mastery with a variety of assessment types. Three question quizzes, exit slips, and classroom presentations are among the variety of assessments offered to her students besides the end of unit tests and district common quarterly summative assessments. Students maintain a tracking sheet of the skills within the current unit which provides students the ability to keep track of their progress on each skill. This tracking sheet also provides students a place to set goals and reflect on their learning. Utilizing standards based grading and having students monitor their own progress are some of the teaching best practices revered by school reform experts.

The research and experts in the field have overwhelmingly asserted that standards-based grading and reporting allows us to align our grading and reporting practices to our standards-based instructional

practices. When implemented, standards-based grading and reporting (SBGR) allows us to more accurately and consistently report student achievement to students and families as it relates to state and local standards.

To summarize, the SIOP model strategies which were displayed in this lesson are instrumental in identifying clear targets, engaging students in the learning process and mathematical discourse, effectively communicate new concepts, and make connections to previous knowledge. There was a definite focus on new vocabulary and language development that was tied to learning the math content. I observed a good balance of student talk and teacher talk during this lesson. The CPM curriculum helps students construct their mathematical learning in a collaborative learning environment with real-world problems. The standards-based grading methods help students to focus on what they need to learn and not on getting busy work completed or looking for extra credit to pass. Students are regularly focused on their progress in the class as they maintain their evidence of math skills per unit. I believe that these instructional methods are beneficial in reducing the achievement gap. In the list of Characteristics of Schools Where Achievement Gaps are Closing (Williams, 2003), we see the following characteristics:

- Important, visible and attainable goals
- Focus on the learners and on teaching and learning that builds on learners' experiences
- Instruction aligned to standards
- Frequently monitored individual student progress
- Staff development and scheduled time for teachers to discuss and plan

Robert Marzano speaks to the effects of vocabulary instruction in content-specific words which produces greater learning (Williams, 2003). To illustrate, think of two students who are quizzed on their understanding of what they read. The student who has not received direct vocabulary instruction, received a score on the test at the 50<sup>th</sup> percentile. The student who received direct vocabulary instruction will obtain a score at the 83<sup>rd</sup> percentile.



## References

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Echevarria, J., Vogt, M.E., Short, D.J. (2008). *Making Content Comprehensible For English Learners: The SIOP Model*. Boston: Allyn and Bacon

Hattie, J. (2009). *Visible Learning*. New York: Routledge.

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Observation Template

Time	Teacher	Students	Questions/Comments