Developing and Sustaining an Effective Sheltered Instruction Observation Protocol (SIOP) Model

Professional Development Program: A Case Study of Charlotte-Mecklenburg Schools

Introduction

The SIOP Model is a lesson design and delivery system of sheltered instruction that when implemented with fidelity can lead to improved student outcomes (Echevarría, Short, & Powers, 2006; Echevarría, Richards-Tutor, Canges, & Francis, 2011; Short, Fidelman, & Louguit, 2012). Sheltered instruction is an instructional approach that helps teachers of English learners make grade-level content concepts clear, while at the same time developing their students' academic English language proficiency (Echevarría, Short, & Vogt, 2014). Thus, the SIOP Model is a tested model of sheltered instruction that articulates all of the instructional features that English learners need in order to be successful in learning both content and academic language. The motivation for the development of sheltered instruction was an acknowledgement in the field of English as a Second Language (ESL) that limited English proficient students would not acquire proficiency in academic language from a curriculum that is simplified in language and content (Short, 2002). Rather, English learners need access to grade-level content concepts scaffolded in a way that makes instruction comprehensible and also maintains a focus on language development. Providing professional development in the SIOP Model to educators of English learners is one way districts and schools can help teachers integrate both content and language into a lesson without sacrificing one or the other.

The SIOP Model in CMS

CAL SIOP began providing introductory SIOP Model professional development services to seven schools of the Charlotte-Mecklenburg Schools (CMS) school district in Charlotte, NC in 2004. Instructional staff enthusiasm and initial success with students led to the expansion of the SIOP Model professional development program (PDP) to 20 schools the following year. To provide teachers with more opportunities for professional learning in the SIOP Model, the ESL Department used Title III federal dollars to fund a district SIOP coach. Since then, CMS has expanded its funding to support six SIOP coach positions, and CMS district-level administration and instructional support teams collaborate with CAL SIOP to provide an extensive SIOP professional development for district leaders and teachers of English learners.

The goal of the CAL SIOP Model PDP for CMS is to help teachers plan, deliver, and reflect on SIOP Model lessons and to help district-level teams build capacity to support and extend SIOP instruction at the school and district levels. Evaluations conducted by Praxis Research Inc. and BYC Consulting reveal that instructional practices aligned to the SIOP Model's eight components and thirty features is evident in content-area classrooms of teachers who have received SIOP Model professional development and that high levels of SIOP teacher professional development and high levels of implementation of SIOP within a classroom are linked to higher levels of academic performance at the student level. A more detailed

discussion of the impact of SIOP Model professional development on teacher practice and student outcomes is shared at the end of the case study.

Background on the district

CMS is a large district with a diverse population. Total student enrollment is 142, 612 in the 2014-15 school year with 11% of students classified as English learners. Individual schools range from having 1% to 50% of their total student population comprised of English learners. Over 170 different languages are spoken by the students in CMS. In order to serve the unique needs of all of its English learners, the districts has established Spanish for Native Speakers classes, dual language schools, Limited English Proficient (LEP) committees at all schools, and a district-level talent development/English leaner professional learning community. Additionally CMS encourages a whole school approach towards supporting English learners, with ESL teachers serving as language specialist in each school. CMS has a Language Instruction Education Program (LIEP) that provides guidance to schools on a continuum of services that English learners can receive, based on many factors, including but not limited to language proficiency levels and time in U.S. schools. Each school also designs its own LIEP to support the specific needs of its English learners. Additional, as a cross-district initiative, a wiki site serves as a hub for best practices for English learner education, including SIOP activities teachers have adapted for their classrooms, videos of SIOP implementation, and SIOP lesson plans. Teachers can post their own best practices and also download materials.

The LIEP also outlines that teachers with English learners in their classrooms are expected to incorporate SIOP practices into their teaching. In elementary schools, both ESL and classroom teachers use the SIOP Model to deliver instruction that allows English learners to acquire content and language simultaneously. Some middle schools also have SIOP courses where English learners are clustered in content classes with their native English-speaking peers and are taught by a SIOP-trained teachers. In high schools, sheltered instruction classes are available for all of the content areas where English learners need to earn content credit. Additionally, the district offers a SIOP Language Lab elective course where beginning proficiency English learners can receive an additional layer of support in the content areas through intense vocabulary and language instruction in Math, Biology, English, Civics and Economics, and History. The district advocates for all sheltered instruction classrooms to be comprised of native English speakers with English learners comprising less than 50% of the total class population. To provide teachers and administrators with the tools and resources they need to effectively implement SIOP instructional practice, the district offers a number of workshops for teachers of English learners and district-based follow-up support through SIOP coaching and the opportunity to observe SIOP teachers in the classroom. Currently, the district has four SIOP coaches to support implementation.

CAL's Work with CMS

In order to meet the diverse needs of Charlotte-Mecklenburg teachers and their students, CAL SIOP provides the district with a range of specialized professional development services that introduce the model, provide follow-up support, and build capacity of district personnel in supporting implementation. CMS coordinates and collaborates with CAL SIOP to provide a PDP that incorporates features of professional development that have positive effects on teachers' knowledge and practice: focus on content knowledge,

opportunities for active learning, and coherence with other learning activities (Garet, Porter, Desimone, Birman, & Yoon, 2001).Each of these core features will be addressed in the following description of the PDP.

Introductory workshops

CAL introduces the SIOP Model to Charlotte-Mecklenburg teachers in four-day workshops tailored to their specific instructional contexts. During these workshops**,** teachers learn about and practice the eight components of the SIOP Model in order to effectively integrate language and content instruction for their content areas. Hence the goal of SIOP Model introductory workshops is to help teachers facilitate student mastery of content by attending to the linguistic needs of their students. The workshops include a variety of activities, such as demonstration and explanation, analysis of video teaching sequences, small group tasks, and the development of instructional activities and SIOP lesson plans. To promote and foster active learning, teachers have the opportunity to work in grade-level, content, and/or school teams to apply the new knowledge with the support of colleagues during the workshops. After the workshops, CMS provides teachers with opportunities to implement the new learning with assistance from district coaches, and receive feedback on SIOP lessons from colleagues via other professional development structures like professional learning communities.

CMS also takes advantage of the SIOP professional learning time to ensure that coherence is established by helping teachers see the connection between the state's Common Core State Standards, the WIDA English Language Development Standards, and SIOP Model implementation. During these mini-sessions the district's SIOP coaches introduce teachers to WIDA's Model Performance Indicators (MPIs) and the Can-Do descriptors. After teachers are familiar with the MPIs and Can-Do descriptors, teachers are provided an opportunity to practice evaluating sample student writing to ascertain the students' English proficiency levels and supports that the students might need with academic language. As such, the teachers who participate in SIOP workshops begin to more fully understand that the WIDA standards are the basis for the language goals of the lesson and the SIOP Model is how the teachers will plan and deliver a lesson to meet those academic language goals.

 Topics of introductory workshops include:

- ν *SIOP for early childhood teachers*
- ν *SIOP for elementary teachers*
- ν *SIOP for secondary teachers*
- ν *SIOP for ESL teachers*
- ν *SIOP for administrators*

Review and Renew workshops

As SIOP Model research has shown (Short, Echevarria, & Richards-Tutor, 2011), teachers need professional development beyond the introductory workshops to help them extend and deepen their implementation. For this purpose, CAL SIOP also provides the district with review and renew workshops. These workshops deepen the participants' knowledge of the SIOP Model through activities that review and expand on

essential features of the SIOP Model (e.g., language objectives, emphasizing key vocabulary, peer to peer interaction, application of language) in order to increase understanding and implementation of the SIOP Model. To continue fostering active learning and keep the focus on subject-area content, a portion of each workshop is dedicated to guided SIOP lesson planning in content and grade-level teams in order to provide opportunities for teachers to practice and apply new learning. The workshops conclude with participant presentations of SIOP Model lessons and with a materials and idea exchange.

The topics for Review and Renew workshops include:

- *Review and renew for elementary teachers*
- *Review and renew for secondary teachers*
- *Review and renew for secondary math and science teachers*
- *Review and renew for secondary social studies and English language arts teachers*
- *Review and renew for elementary math and science teachers*
- *Review and renew for elementary social studies and English language arts teachers*

Job-Embedded Professional Development

There is consensus in the professional development literature that job-embedded professional development is one of the more effective forms of professional development (Desimone, 2009; Garet et al., 2001; Hawley & Valli,2007). Learning is often more powerful and lasting when it derives from the teacher's work experience and directly feeds back to the teachers' work environment. As such, CAL has also provided CMS teachers with job-embedded professional development in order to help them apply specific features through lesson planning and analysis. These sessions provide additional support to teachers as they implement the SIOP Model in their classrooms.

These sessions have included:

- *SIOP lesson study*
- *SIOP guided lesson design*

SIOP lesson study invites teachers to critically reflect on their implementation of the SIOP Model with colleagues who are also engaged in the process of deepening their understanding of the SIOP Model. During the lesson study process, teachers collaboratively plan lessons, observe each other, and provide critical feedback. The SIOP lesson study process is introduced to teachers during a one-day workshop and after forming lesson study groups, teachers identify a SIOP focus for an upcoming lesson, plan the lesson the lesson as a team, and then record themselves teaching a 45-minute lesson. Then teachers meet in their small groups for half-day sessions to analyze the videos of their lessons and provide structured feedback to each other. During the observation and feedback portion of the sessions, the CAL facilitator keeps the discussion focused on SIOP and helps the teachers set goals for continued learning in the SIOP Model in order to deepen SIOP implementation. Based on the Japanese model of lesson study, SIOP Model lesson study can increase teachers' knowledge base of working with English learners and lead to enhanced use of sheltered instruction in the classroom (Honigsfeld & Cohan, 2009).

In *guided lesson design*, teachers in professional learning communities, content area teams, or grade-level teams select from a menu of options designed to assist them in implementing the SIOP Model with more fidelity in their teaching practice. Situated in the teachers' professional work day, teachers work with their curriculum, standards, and colleagues to unit plan, SIOPize an existing lesson, identify the SIOP features in lesson plans or videos, analyze classroom materials for academic language to teach, create a bank of content and language objectives for upcoming units, adopt an assessment for English learners, create activities for specific SIOP features (e.g., vocabulary teaching), and problem-solve to address challenges in SIOP implementation.

Building Capacity in the SIOP Model

To further ensure coherence with the district's overall instructional models and goals, CAL has provided CMS with workshops for staff in teacher-support roles. These workshops prepare coaches, administrators, and facilitators to provide job-embedded professional development and workshops to teachers aligned to other initiatives adopted by the school or district. During these workshops, participants become familiar with the SIOP Model and have opportunities throughout the workshop day to reflect on and incorporate sheltered instruction principles into the teacher support services they provide. Attendees of these capacity building workshops include literacy and math coaches, curriculum designers, professional developers, building and district administers, and learning specialists.

Topics include:

- *SIOP Model Training of Trainers workshops*
- *SIOP Model Coaching workshops*
- *SIOP for PreK coaches*
- *SIOP for academic facilitators and administrators*
- *Supporting and aligning academic literacy instruction using the SIOP Model*
- *SIOP for teacher leaders*
- *SIOP coaching consultations for administrators*

Below is chart summarizing how CMS's professional development program aligns with the features of effective professional development from the literature.

Features of Professional Development from the Literature[1]	Characteristics of CMS Professional Development Program
Sustainable and intensive	Workshops are 28 contact hours and teachers receive follow-up coaching and lesson design support from district staff and/or review and renew workshops of up to 14 hours on specific SIOP features

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[1] Van den Berg, Ros, & Beijard (2014). Improving teacher feedback during active learning: Effects of a professional development program. *American Education Research Journal*. 51 (4). pp 772-809.

Collective participation	Teachers attend introductory workshops geared towards their grade level and are encouraged to attend in school teams. Schools can participate in SIOP lesson study to promote collaboration and deepen SIOP implementation
Goals clearly communicated	All SIOP workshops establish content and language objectives for the participants to meet by the end of each session. The district offers mini-workshops embedded within the CAL SIOP Introductory workshops that connect SIOP workshop content to the WIDA ELP standards. In this way, participants gain a clear understanding of how the goals of the SIOP workshops align to support and enhance the goals and initiatives established at CMS.
Real-life problem solving and work examples	CAL SIOP facilitators make extensive use of authentic classroom videos to showcase SIOP implementation and promote participant reflection. SIOP facilitators also encourage teachers to debrief at the conclusion of each demonstration and provide teachers with multiple opportunities to read SIOP lessons and identify features that make the lesson comprehensible for English learners.
Modeling target behavior	CAL SIOP facilitators design and deliver professional development sessions that model the behaviors they expect to see in a classroom with high fidelity to SIOP implementation. For example, all professional development sessions outline language objectives, build or activate teacher background knowledge, foster interaction, include activities that promote higher order thinking, provide opportunities for language and content integration, and review key concepts at the conclusion. District coaches can also support teacher learning of new behaviors via coaching and co-teaching.
Authentic and integrated activities	Teachers engage in *make and takes* to practice and apply the demonstrated SIOP features and are provided time to plan SIOP lessons collaboratively and receive feedback on them. The district also maintains a SIOP wiki that teachers can use to get ideas for their own lessons and as a way to share successes they have experienced via SIOP implementation
Opportunities for active learning	Teachers participate in learner activities during the workshops that allow for them to experience SIOP features in action and reflect on the experience. In addition to CAL follow-up offerings on guided lesson design and SIOP lesson study, the district provides opportunities for teachers to plan and reflect on implementation of SIOP lessons during the school day via professional learning communities, coaching, guided lesson design, and SIOP lesson study.
Existing knowledge as foundation for new knowledge	CAL SIOP facilitators ask teachers to rate their existing SIOP implementation prior to the introductory workshops. Then CAL SIOP provides different opportunities throughout the workshop for teachers to build on how these beliefs are either reinforced or challenged by demonstration of and learning about the SIOP Model.

Results of CAL's Work with CMS

Monitoring and measuring the efficacy of the SIOP Model professional development is a critical component of the district's SIOP Model initiative. As is linking student outcomes to teacher implementation of the PDP as the ultimate goal of any PDP is to increase student achievement. To this end, an independent evaluator, Bruce Yelton of Praxis Research Inc./BYC Consulting, evaluated the teacher learning and student outcomes from 2004 to 2009. Highlights of the results are reported below[2].

SIOP Impact in Schools in 2005-06

School type	Number of schools implementing SIOP	Student outcomes	Data trends
Elementary	21	12 schools met Annual Yearly Progress (AYP) reading target; 13 schools met AYP math target; Six schools met the LEP	Six of the 12 schools that met AYP reading targets also met LEP AYP reading target. Five of the 12 schools that met the AYP math target also met the LEP math target.
Middle	19	Four schools met AYP reading target; 8 schools met AYP mat target; 1 school met both AYP reading and math targets	Greater reading gains in SIOP middle school classrooms compared to non-SIOP classrooms
High	5	One school met NYP reading target and two met AYP math target	Statistically higher scores in SIOP high school classrooms for summative Algebra 1, Geometry, and English 1 assessments.

SIOP Impact in Schools in 2006-2007

ν   In a study of matched classrooms (SIOP, non-SIOP), students in 5th grade SIOP classes showed significant progress in reading and students in 7th grade SIOP classes showed significant progress in reading and math.

ν   Students in SIOP U.S. history, biology, and civics/economics has significantly better growth on end of course tests than students in non-SIOP classes.

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[2] Appalachia Regional Comprehensive Center (2009). *SIOP implementation: NC success stories.*http://sites.edvantia.org/publications/arccwebinar/NACSIOPwebinar_032609_final.pdf
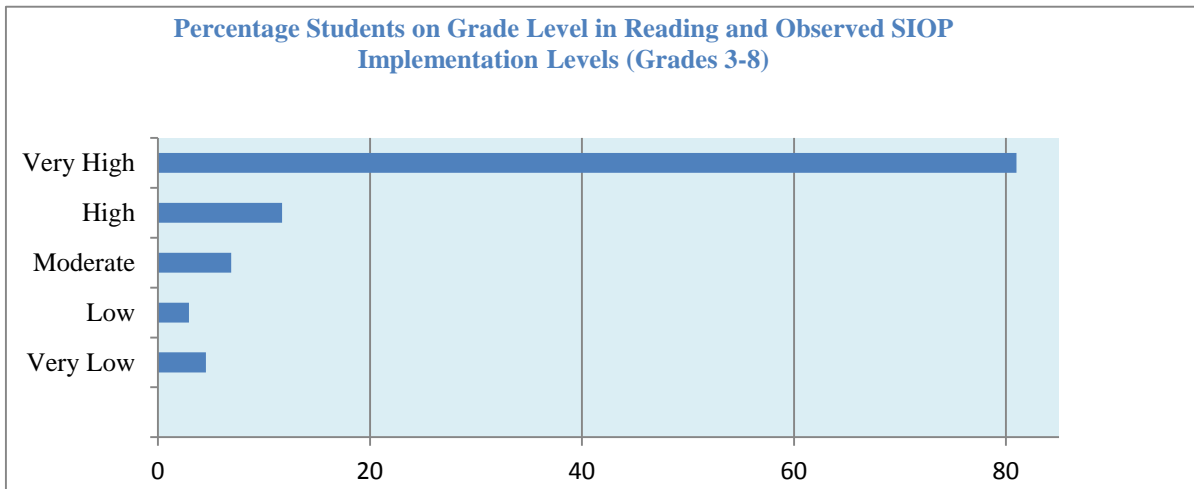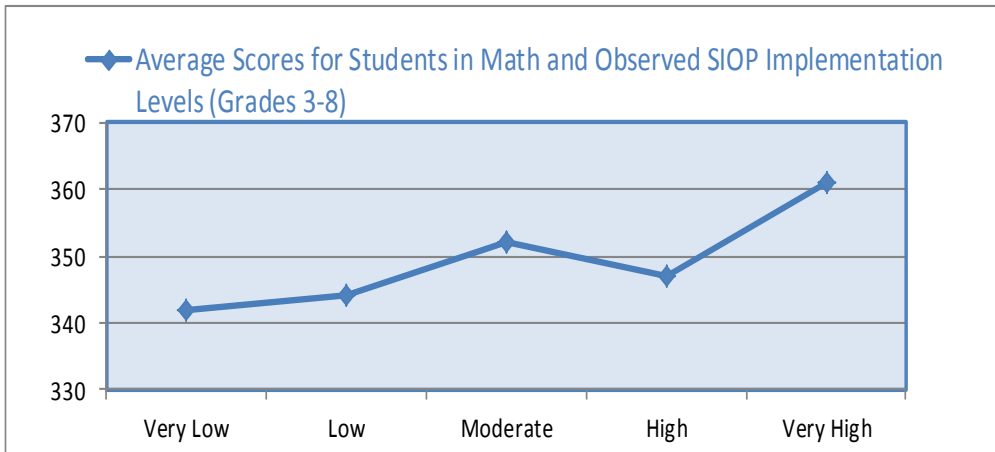
SIOP Research Findings in 2008-2009

- ⱴ SIOP professional development made a difference in the way teachers delivered the curriculum. The SIOP observation protocol was able to distinguish teachers with SIOP professional development from those who had not experienced the training [Cronbach's Alpha score of .76].
- ⱴ On average, Hispanic students in elementary-school-level SIOP classrooms did as well as their non-Hispanic peers on end of grade (EOG) reading and math testing while Hispanic students in non-SIOP classrooms scored significantly lower (ARCC, 2009).
- ⱴ Students with SIOP-trained teachers showed statistically significant higher rates of student engagement in class using the SIOP protocol.

- ⱴ On average, lessons delivered by science and math teachers provided professional development in the SIOP Model were awarded higher scores on the SIOP observational tool when compared to lessons delivered by social studies and language arts teachers also provided SIOP Model professional development (ARCC, 2009).

Building on these initial findings, CMS ESL staff, along with technical assistance from Praxis Research Inc./BYC Consulting, have collected data to assess the implementation and impact of SIOP since 2013[3, 4]. As a result, CMS found for four schools, that SIOP Model professional development positively correlates to SIOP Model implementation across grade levels and content areas. In a study investigating the impact of SIOP implementation levels on student achievement in math and reading, the district found that high levels of SIOP teacher professional development and high levels of implementation of SIOP instructional practices within a classroom are linked to higher levels of student academic performance. Thus, students in classrooms with teachers who received less SIOP Model professional development and exhibit lower levels of SIOP implementation have lower scores in reading and mathematics as measured by EOG Scale Scores and On-Grade-Level performance.

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[3] Yelton, Bruce T. (2011). *SIOP: What Makes it Work?* Charlotte, NC: Charlotte-Mecklenburg Schools Second Language.

[4] Charlotte-Mecklenburg Public Schools (2013). *Sheltered Instruction Observation Protocol (SIOP) in the Charlotte-Mecklenburg Schools: A Case History.*

Average Scores for Students in Math and Observed SIOP Implementation Levels (Grades 3-8)

Percentage Students on Grade Level in Reading and Observed SIOP Implementation Levels (Grades 3-8)

These findings are consistent with the results of other recent research on levels of SIOP implementation and student achievement (Echevarria, Richards-Tutor, Chinn, & Ratliff, 2011). The study also revealed that all teachers, even those with little to no SIOP professional development, demonstrated evidence of increased SIOP implementation from Fall 2011 to Spring 2012. Observational data using the SIOP Protocol suggests that SIOP Model features (scaffolding, building context, vocabulary skills) diffuse across the professional learning community within a school, even to teachers who have not participated in SIOP professional development. Additionally, after receiving professional development in the SIOP Model, teachers and administrators report SIOP is an effective way to support ESL students, exceptional children (EC) students, and lower-literacy students to achieve content and language objectives.

The district collected qualitative data on teacher perceptions and reactions to the SIOP professional development and student learning to corroborate and expand on the quantitative data[5]. Teachers indicate they are able to integrate their learning about effective practices for English learners with effective instruction for all learners:

SIOP is very unique and can be used with every level. Now we're trying to get it to a level that doesn't just help my language and lower-level kids who need all sorts of different ways to learn, but I want it so that I can present it to a higher group because my upper level kids need exposure to different ways of learning too." –CMS teacher

Additionally, schools where teachers consistently implement the SIOP Model report that the techniques are helping students master content and perform better on required assessments and hence helping their schools perform better under NCLB accountability.

"I think it's helping some kids master content versus just the overview—we want them to learn it, hopefully for life instead of just to take the quiz and forget it before the EOGs come. " –CMS teacher

"A lot of the high-stakes testing is done; there's a lot of language even in math. There's a lot of word problems and if they want the scores to go up, they're going to have to do something to help those kids who can't read or understand the question the way it's written." - CMS teacher

Conclusion

Through its collaboration with CAL SIOP and its commitment to quality and sustainable professional development, CMS has leveraged core features of effective professional development to provide teachers with access to a variety of tailored professional development services that meet their diverse instructional needs and are situated into their instructional context. As is evidenced by evaluations on teacher practice and research on student performance, extensive professional development in the SIOP Model has affected change in instructional approaches and increased academic achievement for the English learners of CMS.

[5] Yelton, B. (2013). *Sheltered Instruction Observation Protocol (SIOP) implementation in CMS: A case study.* Charlotte, NC: Charlotte-Mecklenburg Schools Second Language.

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