CREATE: A Comprehensive Model for Instruction of Academic Language and Literacy in the Content Areas

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Introduction

English learners continue to lag behind their English-proficient peers in terms of academic achievement (National Center for Education Statistics, 2011). In addition, Hispanics, who make up the largest group of English learners in the United States, have the highest high school dropout rate in the country (Chapman, Laird, Ifill, & KewalRamani, 2011). As a response to this achievement gap and numerous other pressures, teachers are being challenged to teach to more rigorous standards, engage students with more complex text, and ensure that their students are college and career ready. At the same time, research on second language acquisition and best teaching practices for English learners, as reflected in the SIOP Model, calls on teachers to incorporate more peer interaction, visuals, hands-on experiences, prereading activities, and scaffolded writing assignments (Echevarría, Vogt, & Short, 2010). Teachers may find this recommendation for scaffolded learning to be in contradiction with district and state expectations for providing academic rigor and preparing students for independent performance on high-stakes tests. The Center for Research on the Educational Achievement and Teaching of English Language Learners (CREATE) has responded to this challenge by integrating academic language development into the rigorous content area instruction of learners in the middle grades. This research brief is intended to explain instructional implications from the 7-year CREATE program of study as well as to guide practitioners in implementing the findings. School leaders who are interested in reforms that target academic language development within content area instruction to boost the achievement of both English learners and English-proficient students will benefit from the approach described in this brief. It will also be valuable for preservice and inservice teachers who are interested in practical techniques for creating scaffolded tasks in lesson plans that are aligned with grade-level content standards.

Research Context and Contributions

During the first 4 years of the CREATE program, researchers conducted separate studies that involved developing curricula for three content areas: social studies, science, and language arts. The intervention sites included classrooms with both English learners and English-proficient students. After 4 years, during which the curricula were tested and revised with promising results (August, Branum-Martin, Cardenas-Hagan, & Francis, 2009; Echevarría, Richards-Tutor, Canges, & Francis, 2011; Snow, Lawrence, & White, 2009; Vaughn, Martinez, Linan-Thompson, Reutebuch, Carlson, & Francis, 2009), the separate studies were integrated into a 2-year, school-wide intervention with an overarching framework of SIOP Model professional development and weekly coaching sessions. Previous research has demonstrated the effectiveness of SIOP as a professional development approach to improve the quality of instruction for English learners (Short, Fidelman, & Louguit, 2012).

Grade 7 teachers at eight middle schools participated in the school-wide intervention. In the first year of this integrated intervention, four schools acted as the control sites, while four schools received the researcher-developed curricula, professional development, and coaching. In the second year, the teachers who had previously been control teachers received the intervention curricula, professional development, and coaching.

In addition to the three content areas originally included in the study, in the final year of research math teachers received SIOP professional development, coaching, and weekly instructional "math tips." Preliminary results indicate that this whole-school approach with language-rich curricula and intensive professional development has been effective and that it benefits all learners in the classroom, not only the English learners (August & Duguay, 2011; Snow & White, 2011; Vaughn & Reutebuch, 2011).

Several aspects of the CREATE intervention make it unique. Its contributions include the comprehensive model for school-wide planning as well as an experimental study of individual best-teaching practices for English learners. While most previous studies have focused on language development or content knowledge separately, the CREATE project focused not only on rigorous grade-level content but also on integrated academic language development. Researchers incorporated a nuanced approach to language development: Rather than focus solely on content vocabulary items as traditional methods do, they also emphasized high-frequency general academic terms (e.g., *structure*, *function*, *implement*) and various morphological forms that characterize academic vocabulary (e.g., *-tion*, *–ly*), in addition to other language structures. Curricula encouraged use of academic language in frequent, rich, extended student discussion. The shared curricular approach implemented in a comprehensive intervention across content areas yields a coherent framework for teaching and learning. Although the intervention required that teachers modify their practice, the innovations were aligned with the state standards that teachers were accustomed to following. Teachers had support in the form of SIOP professional development and intensive individual coaching. Another notable attribute of CREATE is that the work was carried out in the middle grades, an area that has been sparsely studied despite the distinct language development and literacy needs of students at this level (Biancarosa & Snow, 2004).

Academic Language in the Classroom

Students' knowledge of academic language is a significant determinant of their academic success (Francis, Rivera, Lesaux, Kieffer, & Rivera, 2006). However, there is no common definition for *academic language* or a clear understanding of how it reflects content knowledge (Anstrom, DiCerbo, Butler, Katz, Millet, & Rivera, 2010). Although states have identified aspects of academic English for the purpose of creating and implementing English language development standards and English language proficiency assessments, these standards and assessments are mostly utilized by ESL teachers and specialists. Increasingly, content area teachers are recognizing the need to help their English learners and English-proficient students with academic language development, but they lack sufficient guidance, preservice training, or professional development (Ballantyne, Sanderman, & Levy, 2008).

Now teachers are being held accountable to new standards that address academic language. The Common Core State Standards address language in three ways (van Lier & Walqui, 2012): by specifying that language is a factor in all content areas; by targeting the development of communicative and academic language through the English language arts standards; and by focusing standards specifically on language, including vocabulary acquisition, conventions of grammar, and knowledge about language. The CREATE project was well under way before the release of the Common Core State Standards and the forthcoming Next Generation Science Standards, but it addresses academic language development in content areas in ways that are aligned with these standards: by providing SIOP professional development and by developing content curricula featuring explicit instruction of language, such as aspects of morphology, and literacy instruction with grade-level text aligned with content concepts.

Common Instructional Design Across the Content Areas

While developing the curricular approach for the integrated intervention, researchers began by considering the demographics of the school sites. The majority of the English learners in these schools were bilingual in Spanish and English, and therefore the students would benefit from explicit attention to cognates and translated glossaries. Additionally, the classrooms that participated in the study represented the reality that most English learners are learning alongside their English-proficient peers in mainstream classrooms. Because many of the English-proficient peers could also benefit from attention to academic language, the content and language objectives were pertinent to all students in the class.

In response to teacher reports that students were often unable to read the assigned textbooks or to follow a lecture on content concepts, the project curricula were written to engage students with academic content and concepts from grade-level standards, but with scaffolding to ensure comprehensibility for English learners and

accessibility to all. Examples of scaffolding included heavy use of visuals to define vocabulary terms and concepts, organization of key concepts in graphic organizers, and teacher modeling of science experiments, debate techniques, and expectations for final products. Student engagement was also promoted through high-interest topics, such as comparing current events to the Texas revolution, debating the humaneness of renting pets, or comparing the various forms of social media to determine word meaning; and through participatory activities including classroom debates in English language arts, partner talks in Social Studies, and hands-on science experiments. Teachers also used multimedia to communicate concepts, for example, by delivering instruction through PowerPoint, showing short video clips, and guiding students to explore interactive websites linked to a content concept.

All of the content area curricula emphasized direct vocabulary instruction of content-specific terms, general academic words, and word-learning strategies. Content-specific terms are those that are most frequent in a domain, such as *siege* in social studies or *evaporation* in science. General academic terms are words like *analyze*, *function*, or *factor* that are frequent in all of the subject areas. Word-learning strategies are important because students have to learn about 2,000–3,000 words per year (a word and all of its forms are counted as one word) in order to gain the vocabulary level of the average high school graduate: 50,000 words (Graves, 2006). Teachers cannot possibly teach all of these words, so they need to be strategic in leveraging student knowledge about word parts and cognates, which requires explicit instruction. For example, in English language arts, students in the CREATE classrooms learned that *analyze* is related to *analyzes* and *analyzing* and also to *analysis, analytical*, and *analyzable*. This word form instruction is vital. Without it, students taking a high-stakes test may know the forms of words that their teacher has introduced (e.g., *revolve, cycle*) but have difficulty applying that knowledge to new forms of the same root (e.g., *revolution, cyclic*). This limitation affects their performance even though they may have mastered the content concepts behind the test. In the CREATE interventions, once students were introduced to the meanings of content-specific and general academic vocabulary terms, they practiced the words through speaking, listening, reading, and writing tasks. Teachers reinforced the terms orally and promoted use of the word wall. The words were purposefully embedded in student activities and reading passages and were provided in the form of word banks and sentence stems for students to use in their writing and discussions. Teachers also used games such as Mix and Match, Bingo, or Ziparound (also called "I have/Who has?") with the vocabulary terms and definitions.

The literacy practices of the CREATE intervention were also intensive and common across the subject areas. Each lesson included a reading passage that was tightly aligned to the content concepts. Teachers introduced the topic with a big idea or overarching question; read the passage aloud, exposing students to the rich academic text; asked detailed comprehension questions after each chunk of text; prompted interactive discussions based on the text; and asked students to complete a graphic organizer or an activity to demonstrate comprehension of the text, such as preparing a travel brochure to match the description of a biome in the passage. In some classrooms, where the majority of students were able to read independently, students worked in pairs to read the text, answer the questions, and complete the tasks. Teachers could then closely monitor other students and provide reading support as needed.

In addition to interaction with text, the curricula encouraged the students to engage in oral discussions with each other. Each week in English language arts, students engaged in a classroom debate. They were given the vocabulary terms and several argumentative positions relevant to an issue, such as the multi-million-dollar salaries of professional athletes. In social studies, peer interaction was guided by questions following short video clips that presented historical events. In science, short partner talks were built into applying vocabulary words to new contexts, while more extended time was given to answering higher order thinking questions related to science content, such as whether or not twins share the same DNA. In addition, small groups participated in hands-on lab experiments, during which they were prompted to use the academic vocabulary of the lessons. Purposeful partnering and group work were used to give students an opportunity to collaborate on content work with peers as well as to develop their academic oral language skills in a safer environment than the whole-class setting. Such techniques as providing sentence stems, word banks, and graphic organizers for pairs or groups helped to ensure that students were on task and using the academic language of the content area.

See Table 1, Planning a CREATE Content Lesson, for specific examples of each of the instructional techniques highlighted in this section and to follow a guide to develop a similar lesson.

Table 1. *Planning a CREATE Content Lesson.*

General guidelines	Sample CREATE content lesson: Genetics
1. Look at the district lesson **scope and sequence** and **state standards.**	**State standard:** The student knows that reproduction is a characteristic of living organisms and that instructions for traits are governed in the genetic material.
2. Identify the grade-level academic **content concepts** to be covered and the topic for a particular lesson.	**Content concept:** Dominant and recessive genes.
3. Decide on the major **lesson activities** or tasks to be completed and the materials needed, including short, targeted media clips and possible texts.	**Lesson activities:** Classroom survey on dominant and recessive traits, lab on the frequency of dominant and recessive genes, short video clip on Gregor Mendel.
4. Identify **academic language** embedded in the texts or tasks that will be assigned to students.	**Academic language in the text or task:** Description and explanation of genetic traits, writing word forms such as *gene/genetic,* and listening to a video and taking notes.
5. Write **content and language objectives** to be posted and presented to students (Himmel, 2012).	**Sample content objective:** Students will distinguish between dominant and recessive traits. **Sample language objective:** Students will describe the inherited traits in their families by discussing with a partner and taking notes.
6. Select **content vocabulary terms** (based on standards).	**Science content terms:** *heredity, dominant trait, recessive trait.*
7. Plan an **engaging introduction to the lesson topic** (e.g., a short video clip, a demonstration, a discussion, or a read-aloud) that connects it to students' lives, past learning, or prior experiences.	**Engaging introduction to the lesson topic:** Teacher displays a PowerPoint with pictures of dominant and recessive traits (e.g., rolling tongue). Students discuss with a partner which trait they have and fill in a graphic organizer. The class tallies the traits evident in their classroom.
8. Select a **text that is aligned** with the lesson content and that is not so lengthy or complex that it extends too far beyond the lesson objectives or so simplified as to be confusing or misleading.	**Aligned text:** The text chosen for this lesson is from the assigned grade-level text and is entitled "Heredity."
9. Based on the text, write questions that assess **overall comprehension** of the passage as well as questions that promote inferencing and higher order thinking and might prompt student discussion.	**Guiding overall question:** What are *alleles* and how do alleles get passed from parents to offspring? **Question embedded in the text:** How can parents *predict* the traits of their future child?
10. Determine whether there are **language structures** or forms that might align with the content of this lesson (e.g., prepositional phrases when discussing geography, *-ly* adverbs when discussing character actions, or comparative adjectives when contrasting biomes).	**Language structure of focus:** Students form sentences using the term *inherited* as a verb (e.g., The child *inherited* his blue eyes from the recessive alleles of both parents) and as an adjective (e.g., A widow's peak is an *inherited* trait). The class generates a list of other words ending in –*ed* that can be verbs and adjectives (e.g., *worried, tired*).
11. Select **general academic vocabulary** terms (e.g., *implement, structure, compare*) based on lesson content and the language of the text.	**General academic terms:** *explain, predict*
12. Identify language functions that students will be using (e.g., persuasion, comparison, description) and determine ways to remind students how to perform them. Determine how you will **scaffold student interaction,** perhaps with sentence stems or graphic organizers.	**Scaffolding student interaction:** Students are given questions for partner talk with sentence stems allowing them to describe a family trait and explain its origin.
13. Decide how and when in the lesson you will **introduce** the two types of vocabulary terms (general and content-specific) to students. Determine how students will **practice** these new terms. Students might complete a personal glossary of terms or another graphic organizer, such as a semantic map (Graves, 2006).	**Introduction and reinforcement of vocabulary:** Teacher introduces the vocabulary prior to the content lesson and the shared interactive reading of the text using visual word cards with an interactive question for students. Words are reinforced in interactive student notebooks, sentence stems, the aligned text, teacher talk, crossword puzzles, and a personal glossary.
14. **Review the content and language objectives** to ensure that they match the lesson activities and tasks planned.	**Reviewing objectives:** The teacher rereads the objectives at the end of the lesson. Students rate their current knowledge of the content concepts and use of the language in the language objectives.
15. Review the lesson plan to ensure that students have the opportunity to use **all four language domains** (speaking, listening, reading, and writing).	**Opportunity to use the four language domains:** • Students discussed their family traits. • Students listened to a short video clip on Gregor Mendel. • Students took notes on classroom traits and completed cloze sentences with proper forms of vocabulary terms. • Students read a text aligned to the content concepts.

Benefits to Using a Common Instructional Model Across the Content Areas

In participating CREATE schools, seventh-grade students attended classes throughout the day in which all content area teachers were using the same model of instruction. All intervention teachers had received professional development in the SIOP Model and in using project curricula. Some of the general academic vocabulary terms were also taught across the subject areas, and teachers in different content areas used some of the same interactive activities. The benefits of this consistent approach were evident in the project's results, suggesting the importance of systematic grade-wide planning. With teachers from different content areas introducing similar or identical words and word-learning strategies, students could recognize the utility of general academic vocabulary across content areas and contexts. Through the repetition of routines, activities, and review games, teachers could reduce transition time between lesson activities for effective management. When teachers promoted structured peer conversations, students were able to recognize that oral language engagement is an academic task, valued and evaluated within the classroom. Having a shared inventory of instructional techniques gave teachers a common focus for discussing successes and challenges and for making modifications to their practice. It also allowed school leaders and instructional coaches to focus their classroom observations, workshops, and feedback on instructional techniques that were common goals across the school and responsive to the needs of the students.

Key Implications From the CREATE Study

While individual research studies have explored many of the practices described above, CREATE's contribution was in combining the approaches in a comprehensive intervention that cut across content areas, integrated content and language learning, and targeted both English-proficient students and English learners. Additionally, the researchers supported teachers by providing the SIOP Model professional development as a framework, curricula aligned to state standards and tailored to the unique needs of students, and weekly coaching sessions. Although school leaders might attempt to implement a handful of these reforms and techniques, it is their systematic combination and a high level of implementation (Echevarría, Richards-Tutor, Chinn, &

Ratleff, 2011) that likely promoted the achievement of students in the intervention group.

Classroom practices to build content knowledge while targeting language development include posting objectives to focus students on the language involved in the content lesson; providing opportunities for content-based oral interaction with diverse partners and groups; directing vocabulary instruction of domain-specific words, general academic words, and word-learning strategies; and using modified grade-level texts that are aligned to content concepts, shared as a group or with a partner, and reviewed through comprehension questions or graphic organizers. Students need opportunities to apply their content knowledge through the use of academic reading, writing, speaking, and listening skills.

While these best practices and scaffolds for English learners are implemented, there is no need to sacrifice grade-level rigor in content classrooms. Early research within the CREATE program demonstrates that English-proficient students in intervention classrooms made significant gains on measures of content knowledge compared with those in control classrooms whose teachers had not received professional development and did not use project curricula (August, Branum-Martin, Cardenas-Hagan, & Francis, 2009).

Conclusion

Using common curricular approaches and instructional strategies across content areas and grade levels will improve students' content knowledge and academic language development, reduce classroom management issues, and create common objectives for a professional learning community. To undertake such a shared approach, teachers need district support in the form of planning time, professional development focusing on language development across the content areas, curricula with a dual focus on content and language, ongoing coaching from a specialist, and strong communication between administrators and teachers. A team approach strengthens teacher practices and allows for instructional changes to be sustained and to meet the needs of each school and its diverse learners. The CREATE study contributes to school reform efforts by suggesting that school leaders and instructors who implement a comprehensive approach will see benefits in the overall content knowledge and language proficiency of both their English learners and their English-proficient students.

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