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Teaching Content to English Learners in the Era of the Common Core Standards

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Key Concepts

CCSS: Common Core State Standards

DLK: Disciplinary Linguistic Knowledge

EL/ELL: English Learners/ English Language Learners

ESL: English as a Second Language

NCLB: The No Child Left Behind Act of 2001

PLK: Pedagogical Language Knowledge

Introduction: New Challenges for Teaching

The Common Core State Standards (CCSS) were released in 2010 (for mathematics, English language arts and literacy in history/social studies, science, and technical subjects). These new standards set high benchmarks for what K–12 students need to know to compete in a global, knowledge-based economy (Council of Chief State School Officers, 2010; Hanushek, Peterson, & Woessmann, 2012). The standards, adopted by 45 states, require students to demonstrate high levels of competency in literacy skills. For example, the CCSS require *all* students to demonstrate critical thinking skills when processing texts of different lengths and levels of complexity, to extract important concepts from a large amount of print and digital media, to explain their point of view based on evidence, and, while doing so, to meet the standards already established by content-area experts in mathematics, science, social studies, and other disciplines. It has been pointed out that the standards are intended to increase students' ability to handle complex texts (Hiebert & Mesmer, 2013). Due to this specific change alone, it will be challenging for *all* students throughout the nation to demonstrate the levels of academic competency defined by the CCSS. Furthermore, the emphasis on text complexity has consequences for a subgroup of the student population, English learners (ELs), whose English proficiency may be limited and who will be required to demonstrate complex literacy and content skills that are highly dependent upon language ability. ELs might demonstrate limited proficiency levels in academic English and native language literacy skills due to a wide range of factors, including educational opportunities in their native country or in the United States, the quality of schooling they have received in the United States, and so on.

These factors may explain, at least in part, why a common definition of ELs across schools, districts, and states is lacking (Linquanti & Cook, 2013). However, to help establish a common ground, states are required to align their definitions of ELs with the federal definition that refers to ELs as students whose English language proficiency is insufficient to meet the standards in classrooms where English is the primary

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"… ELs will need even more support from both their language and content area teachers, particularly if they are to meet CCSS's more rigorous academic standards. Hence, the entire educational community is now faced with the challenge of how to best address ELs' educational needs."

language of instruction.[2] As implied by this definition alone, many non-native speakers of English are expected to cultivate both their content knowledge and their competency as English speakers, writers, and readers.

The No Child Left Behind (NCLB) Act of 2001 required schools to assess, and be held accountable for, ELs' academic progress over time. The implementation of these reforms, together with demographic changes over the past decade, made it all the more important for educators to pay attention to the academic needs, strengths, and progress of ELs. The CCSS, which were built on a more uniform set of standards compared to NCLB, brought renewed attention to the increasing numbers of ELs and the academic hurdles ELs face, an issue that is reflected in achievement gaps between ELs and non-ELs in reading, mathematics, and other subjects.

ELs currently constitute 10 percent of the U. S. public school population (Bunch, Kibler, & Pimentel, 2013), and their numbers are growing: The United States had approximately 5.2 million EL students enrolled in public schools in 2010, which is 700,000 more than in 2000–2001 (National Clearinghouse for English Language Acquisition, 2011). In addition, many of these EL students face linguistic and academic challenges (Bunch, 2013) as evidenced by an achievement gap in mathematics and reading between ELs and non-ELs (Aud et al., 2011). The eighth-grade National Assessment of Educational Progress (NAEP) mathematics test results from 2005 showed that 71 percent of eighth-grade ELs scored below the basic level,[3] while only 29 percent of non-ELs did so. Sixty-nine percent of ELs and 26 percent of non-ELs scored below basic in mathematics in 2007. The achievement gap widened slightly between 2005 and 2009, as 72 percent of ELs and 25 percent of non-ELs scored below basic in 2009. Further, students who are classified as ELs[4] drop out of high school at a higher rate compared to those who speak English at home (Short & Fitzsimmons, 2007). For all of these reasons, ELs will need even more support from both their language and content-area teachers, particularly if they are to meet the CCSS's more rigorous academic standards. Hence, the entire educational community is now faced with the challenge of how to best address ELs' educational needs.

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[2] The U.S. Department of Education (USED) requires states that are participating in the two Race to the Top consortia to use a common definition that is in line with Section 9101(25) of the Elementary and Secondary Education Act (ESEA): LIMITED ENGLISH PROFICIENT - The term limited English proficient, when used with respect to an individual, means an individual — (A) who is aged 3 through 21; (B) who is enrolled or preparing to enroll in an elementary school or secondary school; (C)(i) who was not born in the United States or whose native language is a language other than English; (ii)(I) who is a Native American or Alaska Native, or a native resident of the outlying areas; and (II) who comes from an environment where a language other than English has had a significant impact on the individual's level of English language proficiency; or (iii) who is migratory, whose native language is a language other than English, and who comes from an environment where a language other than English is dominant; and (D) whose difficulties in speaking, reading, writing, or understanding the English language may be sufficient to deny the individual — (i) the ability to meet the State's proficient level of achievement on State assessments described in section 1111(b)(3); (ii) the ability to successfully achieve in classrooms where the language of instruction is English; or (iii) the opportunity to participate fully in society.

[3] Eighth-grade students performing at the Basic level should exhibit evidence of conceptual and procedural understanding in the five NAEP content areas. This level of performance signifies an understanding of arithmetic operations — including estimation — on whole numbers, decimals, fractions, and percents (National Center for Education Statistics, 2013).

[4] ELs who are reclassified as fluent English proficient may not be included in the count of EL dropouts.

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"All teachers, not just ESL teachers, must therefore be held responsible for effective instruction of ELs ... How then can content area teachers improve their instructional practice?"

In this essay, we explore the implications of the CCSS and what they mean for teachers who instruct EL students in subjects such as science, social studies/history, mathematics, and English language arts. Are these content-area teachers adequately prepared to teach ELs? Will content-area teachers in mathematics, English language arts, social studies, and science need specialized training to be able to cultivate literacy skills among ELs? If so, then what do teachers of science, history and other subjects need to know and be able to do in order to meet the needs of these students?

Training for Teaching Content to English Learners (ELs)

Mainstream teachers (i.e., content teachers) who teach math, history/social studies, English, and science/technical subjects but who are not trained in English as a second language (ESL) are currently not sufficiently equipped to fully address ELs' academic needs. Many educators have had few, if any, opportunities for professional development that would allow them to teach ELs (Gandara, Maxwell-Jolly, & Driscoll, 2005). Forty-two percent of teachers report that they are teaching EL students, but less than 8 percent of them have had access to eight or more hours of EL-oriented pedagogical training (National Center for Education Statistics, 2002). This problem is felt most acutely by mainstream teachers in states and classrooms with large numbers of ELs (Gandara, Maxwell-Jolly, & Driscoll, 2005).

One reason that most mainstream teachers are insufficiently equipped to teach ELs effectively could be that developing ELs' language skills has traditionally been viewed as the responsibility of ESL teachers. These teachers have been designated as "EL-dedicated staff" since the *Lau v. Nichols* U.S. Supreme Court Decision and the 1968 Bilingual Education Act (Hamann & Reeves, 2013). However, with the increasing number of ELs in many classrooms, it has become impossible to ignore the role of content teachers who are teaching both language and content to EL students. All teachers, not just ESL teachers, must therefore be held responsible for effective instruction of ELs (de Jong & Harper, 2008; de Jong & Harper, 2011; Lucas, 2011; Lucas, Villegas, & Freedson-Gonzalez, 2008). How then can content-area teachers improve their instructional practices with ELs?

Improving Teaching of Content to English Learner (EL) Students

First and foremost, we believe that teachers need to recognize the central role *language* plays in the teaching of content, and develop their teaching skills through understanding the role of language in teaching content. This is one of many areas of effective EL teaching that warrants consideration. Second, we need to agree on what content teachers need to know about language in order to guide them toward a better understanding of the role language plays in content learning and toward engaging ELs in using the language of the discipline.

The role of language in teaching content. It is crucial for content area teachers to effectively address the linguistic challenges EL students face when learning academic content taught in English. This includes facilitating ELs' comprehension of language specific to the particular discipline or subject matter, as students build their content knowledge through this medium (Barron & Menken, 2002; Hamann & Reeves, 2013; Kindler, 2002; Waxman & Tellez, 2002). Addressing language barriers is challenging,

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and failing to do so adequately can prevent ELs from learning content (de Oliveira & Cheng, 2011; Fang, 2006; Schleppegrell, 2001).

The following examples illustrate the role linguistic features can have in content learning:

- "If the total number of soccer and basketball players is 60, then how many soccer players are there in the school?" In this sentence, the if-then clause helps construct the logical relationships that a mathematical equation carries at the sentence level (Schleppegrell, 2004). If ELs do not comprehend this particular relationship, they might have a hard time forming an algebraic equation to solve the word problem.
- "Finches with larger and stronger beaks were better able to open the tough pods than were finches with smaller, weaker beaks [ABLE TO OPEN THE TOUGH PODS]" (Fang, 2006, p. 497, capitals in the original article). The phrase "able to open the tough pods" is omitted at the end of the sentence to avoid repetition and redundancy. This is a typical feature of written English commonly found in science texts and it can pose challenges for some struggling readers. ELs may have a hard time understanding the comparison between the two finches, particularly in relation to their ability to open the tough pods.

The language used in these sample texts could present more of a challenge for an EL student who is faced with the classroom use of the language specific to a content area, which is going to be very different from the everyday spoken or written English language he/she normally reads or listens to (Cummins, 2001). As described above, the connection between building knowledge about content and cultivating language skills cannot be separated. Thus, content-area teachers should be aware of how content-specific language is perceived by EL students, as well as the cognitive demands it places upon EL students when they produce spoken and written products (Brisk & Zisselsberger, 2011; Fang & Schleppegrell, 2008; Schleppegrell, 2004).

For example, a science teacher should be able to understand why ELs might be having a hard time writing their laboratory reports (Schleppegrell, 2004) and provide a writing exemplar to reduce the cognitive load. Likewise, a mathematics teacher should be able to help EL students explain solution processes and/or describe conjectures (Moschkovich, 1999), just as a social studies teacher should be able to facilitate ELs' ability to describe a set of events in chronological order. Such support could benefit all learners and is crucial if teachers are to meet the needs of their EL students effectively (Bunch, 2013). These content teachers would learn how to engage ELs in the appropriate *use* of the language of the particular discipline to perform these language-related activities. They would also acknowledge that the responsibility to do so is theirs as well (Bunch, 2013).

What content teachers need to know. There are several complementary perspectives that shed light on what content teachers need to know to engage ELs in understanding and using the language of the discipline appropriately.

"Teachers need DLK to identify linguistic features or characteristics and help ELs make appropriate linguistic choices when expressing meaning using the language of a specific content area."

"DLK refers to the linguistic knowledge base that all *teachers of EL students need to develop to facilitate ELs'* understanding *of oral and written language within a discipline and their use of language in ways that allow them to actively participate in the discourse of the particular discipline."*

Galguera (2011) and Bunch (2013) offered insights that can begin to answer questions regarding teaching content to ELs. Bunch argued that teachers need to understand pedagogical language "directly related to disciplinary teaching and learning and situated in the particular (and multiple) contexts in which learning and teaching take place" (p. 307). For Bunch, content teachers should be equipped with linguistic and pedagogical tools and strategies that make content accessible to ELs. Bunch asserted that those teachers' pedagogical language knowledge (PLK) surfaces when they focus on the central role of language in content instruction.

In a similar vein, Turkan, de Oliveira, Lee, and Phelps (2014) stated that disciplinary linguistic knowledge (DLK) is central to the work of teaching content to ELs. DLK refers to the linguistic knowledge base that *all* teachers of EL students need to develop to facilitate ELs' *understanding* of oral and written language within a discipline and their *use* of language in ways that allow them to actively participate in the discourse of the particular discipline. Teachers need DLK to identify linguistic features or characteristics and help ELs make appropriate linguistic choices when expressing meaning using the language of a specific content area. This knowledge base also allows teachers to model for EL students how to communicate their ideas using the language of the subject matter, orally and/or in writing. When working with ELs, content teachers would find it helpful to be able to identify which linguistic characteristics ELs do or do not find difficult. It would also be useful for content teachers to know how to model appropriate ways of communicating ideas in the particular subject.

This can be illustrated with an example of a mathematics teacher teaching the Pythagorean theorem and how to find the length of the hypotenuse of a right triangle. The teacher elaborates upon the meaning of the text that contains clauses written in a technical and mathematical language such as "taking the square root involves finding the number that, when multiplied by itself, gives 25" and expressions such as "inverse operations." She identifies various features of the technical language and tries to make it accessible to everybody in the class. Later during the lesson, the teacher asks students to find the unknown side of the right triangle shown in a worksheet and explain in writing how they solved the problem.

An EL student hands in the following answer:

$$a^2 + b^2 = c^2$$
$$6^2 + 8^2 = c^2$$
$$36 + 64 = c^2$$
$$100 = c^2$$
$$10 = c$$

I work the formula. The two legs are given, so I put 6 and 8 in for a and b. 6 × 6 = 36. 8 × 8 = 64, and 36 + 64 = 100. I squared 100 to get 10. The answer is 10.

The student got the right answer, but there is a problem in how the student wrote the answer. How can the teacher help the student express the solution to the problem correctly, using the language of mathematics? The teacher needs to understand that the EL student's mistake stems from confusing two expressions — i.e., "to square" and

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"to take the square root of," two related but inverse mathematical operations. While non-ELs might make a similar mistake, the point we are making here is that it is the teacher's job to help the student accurately formulate his/her answers with accurate use of mathematical language. The teacher could underline the verb "squared" and remind the student of the correct phrase — "take the square root of."

The question now becomes: Is it sufficient for the teacher to correct the EL student's use of the verb "squared"' with "take the square root of"? Seen from the perspective of DLK, the starting point for this teacher should be to identify what the student can and cannot do at the appropriate word, sentence, and discourse levels for mathematics, which calls for knowledge of language as it relates to the specific content area. "Discourse" refers here to how language is used appropriately by members of a group of mathematicians to communicate mathematical ideas, concepts, and reasoning. The teacher identifies which linguistic level (i.e., word, sentence, discourse, or all three) the student is having a hard time with. In this case, the student might be making the mistake due to confusion at the word and discourse levels. Then, the teacher should explain and model for the EL student why "take the square root of" is the "correct" way to express the result of this particular mathematical operation. To show the student how to use the mathematical language appropriately will require systematic and repetitive practice to which the teacher should be willing to dedicate time. In this scenario, a teacher who has not been trained to understand how EL students may think, and/or how to teach them the mathematical language, could fail to link the EL's mistake to underlying linguistic or conceptual misunderstandings. The teacher may instead simply provide the correct answer and move on.

If we look in a similar fashion through the lens of PLK, we realize that the teacher needs certain strategies to facilitate ELs' use of language specific to mathematics. In addition, the teacher should facilitate the students' understanding of the underlying linguistic misconceptions and how to correct them. This underlines the importance of providing teachers with training so that they have the pedagogical and linguistic skills needed to effectively foster the academic growth of ELs in content classrooms.

Implications for Teacher Training

The CCSS will affect teaching of all learners, not only EL students. It will, however, be particularly important for EL students to improve their linguistic skills in order to learn the content. Hence, it is crucial to emphasize in teacher training that language plays an integral role in content learning and teaching, and should not be treated as something that is separate from, prior to, or subsequent to it. Teacher training should provide explicit instruction on how to identify what language skills EL students need to understand the content, and opportunities to put these skills into practice. The specific demands for this training, its length and components — fieldwork, extended apprenticeships, and didactic coursework — need to be researched further.

Suggestions for More Research

Research will pave the way for understanding what teacher education and teacher support systems must do to ensure quality instruction for ELs. To this end, we could start with several broad but important questions:

- What are the competencies above and beyond content knowledge for teaching of a specific discipline that teachers need to know when teaching content to ELs?
- What do student teachers need to learn in order to acquire these skills? What practice-based learning experiences should accompany this knowledge?
- What should teacher training programs add to their curricula so that pre-service teachers become well equipped to meet the needs of EL students upon graduation/entry into the field?
- What, if anything, should teacher training programs remove from their curricula in order to make time for the additional focus on the needs of ELs?
- How can assessment tools be used to determine whether the requisite skills have been acquired and diagnose areas for improvement? What formative assessment tools could guide teachers' professional development?

These questions and others could, in a well-formulated research agenda, inform the development of formative and summative teacher assessment measures that benefit teacher educators and employers. It is critical that all educators are sufficiently equipped to meet new challenges like the CCSS. This will not only benefit EL students, but will also benefit the general student population.

Summary

The CCSS require students to master complex literacy skills and increase their ability to acquire high-level concepts. This requirement underlines the central role teachers have in teaching higher literacy skills, and it comes with higher demands on teachers and teacher training. It will be a challenge for all students to reach the current proficiency standards and even more so for EL students who are academically disadvantaged. Teachers will shoulder most of the weight in addressing the increasing academic demands on all learners, and they will need explicit training in how to teach content to students from diverse linguistic and cultural backgrounds. Teachers need to strengthen their role as language teachers — even if they are technically mathematics or science teachers. It is important to realize that teaching content to ELs is neither simply good teaching nor an intuitive skill. It is a specific body of knowledge and skills that goes above and beyond the best practices for teaching particular disciplines. In order for ELs to excel in academics — which is a goal of the CCSS — they need to be able to understand their teachers' explanations, and be able to write and speak using the language of the particular discipline. The task of creating and presenting content to EL students is complex and challenging; therefore, we need to support teachers in this task in order to provide equal learning opportunities for *all* learners.

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