

Presenting Academic Language to Mainstream Teachers

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ESL teachers are being asked to lead the work of infusing academic language into to the K-12 curricula. This paper will give you some ideas about how to approach the challenge of this work.

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In the last few years, two major movements in American education have led to practices that, when implemented, may lead to improvement for the education of English learners. One is the creation of the Common Core Standards in 2010 (Common Core State Standards, 2013), and the other is a new teacher performance assessment for student teachers called edTPA (Stanford Center for Assessment, Learning and Equity, 2013) that was introduced in Minnesota two years ago.

Common Core Standards and edTPA

The Common Core Standards (2013) are a set of academic standards that children are supposed to meet in English and math at the end of each school year. The initiative to draft them was led by United States governors and education commissioners. So far, 45 states have adopted the Common Core State Standards. Minnesota has chosen to adopt the English, but not the math standards.

EdTPA is an assessment system, administered during student teaching, that is designed to allow teacher candidates to show that they have the skills to meet the demanding requirements of teaching children so that they can meet the Common Core Standards. The creation of edTPA was a joint effort by the Stanford Center for Assessment, Learning and Equity and the American Association of Colleges for Teacher Education (Stanford Center for Assessment, Learning and Equity, 2013). What both the Common Core Standards and edTPA have in common that is so important for English learners is their emphasis on academic language, and the demand that all teachers make them a part of their responsibility.

If we are to help our mainstream colleagues become effective teachers of academic language, we all need to agree on what academic language is. Zwiers (2008) describes academic language as:

...the language required for schooling. It requires both key content words as well as language structure Academic language is intricately linked to higher order thinking processes, developed by extensive modeling and scaffolding of classroom talk,

accelerated by weaving direct teaching of its features while teaching content concepts. (p. xv.)

In keeping with Zwiers' definition, Common Core repeatedly makes references to language structures that children should learn (Common Core State Standards, 2013). For kindergarten through 12th grade it spells out language structures and functions that teachers should teach. Here are a few example for first and fourth grades:

Examples of Common Core Standards Addressing Academic Language
First Grade: Use frequently occurring conjunctives (<i>and, but, or, so, because</i>) Use determiners (articles- <i>a, an, the</i> , demonstratives <i>this, these, that, those</i>)
Fourth Grade: Link ideas within categories of information using words and phrases (e.g. <i>another, for example, also, because</i>) Use relative pronouns (<i>who, whose, whom, which, that</i>) and relative adverbs (<i>where, when, why</i>).
Ninth-Tenth Grade: Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent; noun, relative, adverbial) to convey specific meanings and add variety and interest to writing or presentations.

For sixth through 12th grades, there is a specific section of the Common Core Standards that refer to the language of history/social studies, science and technical subjects. An example from the 11th to 12th grade section includes:

Example of Common Core Standard for Secondary Content Academic Language
Analyze in detail how a complex primary source is structured, including how key sentences, paragraphs, and larger portions of the text contribute to the whole.

Similarly, edTPA expects candidates to show how they teach academic language supporting their content. EdTPA content is proprietary, but the writers at Stanford University offer the following examples and many more (SCALE, 2010):

Academic Language Examples
Examples of connector words for different purposes: <ul style="list-style-type: none">• Temporal: first, next, then• Causal: because, since, however, therefore• Comparative: rather, instead, also, on the other hand• Additive: and, or, furthermore, similarly, while• Coordinating: and, nor, but, so

If you have had the opportunity to work with mainstream teachers on academic language, you have probably noticed that anything beyond the key vocabulary (often bolded in the text) tends to not be in their frame of thinking. They tend to not be language experts. The question then is, how can we help mainstream teachers become competent instructors of academic language? Fortunately, I have had a lot of opportunities to work with them on this task, and I have gained some expertise. The purpose of this paper is to share those ideas with you so that you can adopt and/or adapt them with the goal of improving the education of ELs in your school.

I often start with Zwiers' definition of academic language, quoted above, and then follow up with another excerpt from Zwiers. Zwiers asks: "Who needs instruction in academic language?" He answers: "They are immigrants, speakers of varieties of English, others who have not been immersed in thought and talk that is valued in school." (Zwiers, 2008, p.xiv) I always ask who has students who fit in one of those three categories, and most public school teachers are quick to respond that they all do. I am trying to convince teachers that what I am going to say to them will be useful for a lot of their students in addition to being essential for the English learners.

A Discussion of Social and Academic English

Many mainstream teachers know Cummins' (2008) terms "BICS" (Basic Interpersonal Communication Skills) and "CALP" (Cognitive Academic Language Proficiency) but few can remember what the acronyms stand for, or have a deep understanding of what each category entails. I prefer to talk about them as social and academic language, and I also add a discussion about discrete language skills (Cummins, 2008) I describe them this way:

Definitions of Social Language, Academic Language, and Discrete Language Skills

- Social Language- language of social interaction with friends and family ("playground language")
- Academic Language- language required for higher order thinking processes to be successful in school and professionally ("classroom language")
- Discrete Language Skill - skills that you need to develop academic language, but knowing them does not constitute academic language fluency (for example: punctuation, reciting ABCs)

The discussion about discrete language skills is necessary, because many teachers think of those skills as being academic language, and think they are already teaching it, but instead they are merely skills that are necessary to develop academic language. I then follow up with a number of examples, and we discuss whether they are examples of academic language, social language or discrete language skills. Here are typical examples, along with the answers:

Academic Language, Social Language or Discrete Language Skill?

1. If the teacher says, “Put down your pencils”, the student will know what to do without relying on visual clues provided by other students putting down pencils.(social language)
2. Students can distinguish main idea from supporting material after watching a video on fall leaf color. (academic language)
3. Students can talk about their weekend plans. (social language)
4. Students can talk about how their scout activities will help them in their adult lives. (academic language)
5. Students can describe the steps of the water cycle. (academic language)
6. Students can compare and contrast mammals, birds, reptiles and amphibians. (academic language)
7. Students can write a face book entry. (social language)
8. Students can conjugate a verb:
 I go, you go, he goes
 I went
 I am going, you are going, he is going
 I have gone, you have gone, he has gone etcetera. (discrete language skill)
9. Students can decode (read aloud) the social studies text. (discrete language skill)
10. Students can say, “I can’t do that math problem because I don’t remember how to multiply fractions.” (academic language)

Once teachers become comfortable with what academic language is and is not, then I proceed to every day teaching examples that I draw from my recent classroom observations to begin the discussion of how to incorporate academic language objectives into the discussion. It is important to use examples from their practice, things they really teach.

Start with Examples Teachers Understand

I often start with a content objective that everyone remembers from their own childhood, and one that people often mistakenly think of as being universal across cultures.

Example of a Content Objective in Math
Students will learn the times tables up to 12 x 12 and understand the concept of multiplication.

Then I discuss the language challenges that multiplication includes. Teachers generally realize that the words “times” and “table” can be problematic, but they rarely think about the morphology or syntax of simple math statements.

Language Challenges of Multiplication Facts
1. <i>Times</i> has nothing to do with a clock, and is a synonym for <i>multiplied by</i> .

2. $3 \times 4 =$ can be said in at least three ways: three times four **is...**, 3 times 4 **makes...**, three times four **equals...**
3. What does “table” mean in math? It is a polysemous word; it has more than one meaning.

When their attention is brought to it, teachers begin to see that the language of math is complicated. I follow up with a social studies example that I saw in a Minneapolis high school class. The content objective was:

Social Studies Content Objective

Students will explain the how per capita consumption patterns differ between developed and developing countries.
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The countries being compared were the USA and India. I ask the teachers what the language challenges associated with this particular content objective might be. We begin a discussion of *per capita*. What does *capita* mean? It has a Latin root that means *head*. Do we have any other words in English that also use *cap* to refer to *head*? *Capital city, captain, cap, capital punishment, decapitate*. Are students likely to have encountered the preposition *per* before? *Percent, miles per hour*. What does *percent* mean? We also discuss what *consume* means, and relate it to consuming food and *consumer*.

A few language savvy teachers also point out the morphemes **-ed** and **-ing** at the end of *develop*, and that the former means that it happened in the past and the latter means that it is happening right now. Based on this discussion, we come up with the following language objectives:

Social Studies Language Objective

Students will understand and use in writing and speaking:

- per capita
- consumption
- -ed in **devel**ped**** (implies the past)
- -ing in **develo**ping**** (implies it is happening now)

With this background, I ask teachers to consider this example from Zwiers (2008, p. 25):

Language Analysis Example

On the other hand, the two scientists had differing views on the topic of evolution.
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I let teachers discuss this example on their own in small groups, and inevitably, they raise issues 1-3. They tend not to think about difference between difference between *different* views and *differing* views. I raise issue number 4 with them to try to scaffold them into thinking more about how language is structured.

Language Analysis Issues
<ol style="list-style-type: none"> 1. What does <i>on the other hand</i> mean? It has nothing to do with hands. 2. What are other ways of saying <i>on the other hand</i>? 3. What is <i>a view</i> in this sentence? It's not something one sees with his or her eyes. 4. Is there a difference between <i>differing views</i> and <i>different views</i>? Does one imply more immediate conflict?

To further practice thinking about language, I love to use the excerpts from a sample Minnesota Comprehensive Assessment (MCA) (Minnesota Department of Education, n. d.). about bats.

MCA Reading Example
<p><i>Even though they fly, bats do not have feathers. Instead, they have fur like many other mammals. Bats do not have actual wings, either...Most bats come out only at night, although some may fly at sunset.</i></p>

To help teachers see what the language objectives might be, I ask them: What essential vocabulary words would you teach students to help them comprehend this passage?

Discussion of how to use this passage with your colleagues is detailed in [Kramer, Lundgren & Mabbott \(2010\)](#). For your convenience, I am copying a table summarizing our discussion from that article here.

Content Objective	Language Function	Language Form	Vocabulary Words
How bats differ from other animals that fly.	Analysis- <i>compare</i> <i>contrast</i> , <i>differentiate</i>	<i>Even though, instead, although</i>	<i>feathers, mammals, wings, fly, actual, sunset</i>

<p>What do you want the students to be able to say/write?</p> <p><i>Even though they are mammals and don't have feathers, bats can fly.</i></p>
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The biggest revelation to teachers through this discussion is that the words that they thought of as being academic challenges, words such as *mammal*, are a small and easier subset of academic language. The word *mammal* is easy to explain through description and pictures. Structural words such as *even though, although and instead*, all of which indicate that an

exception is coming up, are rarely taught in schools, even though they are essential for understanding academic texts. They perform the function of comparing, contrasting or differentiating, concepts that students are expected to master across the disciplines.

Once teachers have practice with these examples, I summarize the key questions to keep in mind when looking for a good language objective to accompany content objectives:

Questions to Help Teachers Find Appropriate Language Objectives
What do you want students to say or write? What function is that language performing ? What language will you teach so the students can tell or write what they know? How can you move your students towards using more sophisticated academic language ?

Using Examples to Teach Teachers about Academic Language

I then provide the teachers with more examples from a variety of disciplines, all obtained from my observations in schools. I will list some here.

Example 1

Math Content Objective: Estimation
Language Objective: Students will estimate using <i>The ballpark answer is.....</i> <i>The approximate answer is.....</i> <i>My estimate is.....</i>

Example 1 engenders an interesting discussion about sports metaphors. This example, taken from the Everyday Mathematics (University of Chicago, n.d.) curriculum, is showing an attempt to make math concepts such as estimation more accessible to children by using the term “ballpark answer”. Since many of our students do not know what a baseball park is, nor how it is related to estimation, the use of “ballpark answer” is confusing. I encourage teachers to teach “approximate” and “estimate” and “ballpark answer” as alternatives. The American society uses sports metaphors abundantly, and we will be doing our students a service to recognize them, and teach them alongside the more academic terms.

Example 2

Language Arts Content Objective: Making predictions in reading
Language Objective: Students will predict using <i>I predict that.....</i> <i>My prediction is that.....</i>

I hypothesize that.....

Making predictions in reading is a common language arts activity. What I find teachers sometimes forgetting to do is to teach the language that making predictions requires, and to build variety in language by adding new ways to do it. When students are first learning, teach them to say “I predict that...”, but add “My prediction is...” once they have acquired “I predict that...”. “I hypothesize” is used more in science, but is another way to predict in non-scientific contexts as well, and learning how to use words in more than one setting helps children to acquire them.

Example 3

Math Content Objective: Probability in math.

Given different colors of candy in a cup, the children made up probability problems and quizzed each other on them with: What is the probability of getting an (orange)?

Language Objective: Using the words *possible* (posible), *impossible* (imposible); *certain* (cierto), students will express probability statements and their reasons using the following pattern:

It's possible to get an orange because there are orange candies in the cup.

It's impossible to get orange because there are no orange candies in the cup.

It's certain to get an orange because all of the candies in the cup are orange.

In the above example, I also suggest to teachers that if they have Spanish speakers in their class, they can make the lesson bilingual by including the cognates **posible**, **imposible** and **cierto**. We then get into a discussion on how most academic terms in English have a Spanish cognate, and that teachers can capitalize on them in instruction even if they don't speak Spanish. Spanish dictionaries are easily found online now.

Example 4

Science Content Objective : Describe the relationship of the planets in the solar system.

Language Objective : Students will use the following language to describe the relationship between planets in the solar system.

Names of the planets: *Mercury, Venus, the Earth, Mars, Jupiter, Saturn and Neptune (Pluto?)*

Structures: *bigger than, smaller than, closer to... than, further away from*

Eg. The Earth is closer to the sun than Mars.

The solar system example is a good way to stress to teachers that small words and morphemes are essential for carrying out language functions. This type of language tends to be invisible to the native speaker, and difficult to the English learner unless it is pointed out to them and taught.

Notice that we use an article, **the**, before Earth, but not before the other planets. Pointing out subtleties of English is something that all teachers should impart to English learners.

Example 5

Science Content Objective: Define cells and differentiate cells from atoms.
Language Objectives: Use the following language to define and differentiate. <i>A cell is.....</i> <i>A cell is defined as.....</i> <i>A cell, the smallest structural and functional unit of an organism,....</i> <i>Cells have DNA but (while, whereas) atoms don't.</i>

I was surprised to see this objective being taught, until the teacher pointed out to me that students get cells and atoms mixed up because they both contain nuclei. Students should be taught the different ways that textbooks indicated definitions. In English, definitions are often signaled by *is*, *is defined as*, or with and appositive set off by commas.

Also note that many students can make comparison using the word **but**, however we would like to move students to use more sophisticated language, so I encourage teachers to demand that students also learn to use **while** and **whereas**. I stress that we want to teach our students to “sound like mathematicians, scientists, social scientists, and literary scholars”.

Example 6

Social Studies Content Objective: Describe the rights protected by the 5 th Amendment of the Bill of Rights: <i>self-incrimination (right to refuse to testify against oneself)</i> <i>due process (No person shall be deprived of <u>life</u>, <u>liberty</u>, or <u>property</u>, without following the law)</i> <i>Property taken by <u>eminent domain</u> must be paid for (if the government needs your property, it must pay for it.)</i> <i>double jeopardy (being tried more than once for the same crime)</i>
Language Objective: Students will explain their rights using: <i>The 5th amendment protects me from _____, which means _____</i>

The 5th amendment guarantees me....., which means.....

When I observed the class where this lesson was taught, I was really pleased to see the social studies teacher providing and expecting students to use the above sentence frames. Students' natural tendencies are to answer with single words or short phrases, and too many teachers accept such answers. To develop more sophisticated English, teachers need to teach it and demand that students use it.

Example 7

Business Content Objective: Investigate colleges and careers and decide which one suits me best.

Language Objective: Students will state their opinion about colleges and careers using:

I prefer to go to...because...

My preference is to attend...because...

I would not be interested in this career, if ...

(I hated children/ I were shy/ blood made me faint.)

Educated speakers and writers of English use the subjunctive mood to indicate a hypothetical state or a state contrary to what is true, such as a wish, a desire, or an imaginary situation. The above example is a very good way to introduce the subjunctive to students, and that they need to use what looks to them like the past tense of the verb.

Example 8

Biology Content Objective: What distinguishes prokaryotes from eukaryotes?

“Karyote” is Greek for kernel, and “eu” means “true”. It refers to the nucleus that eukaryotes have and prokaryotes do not. “Pro” means before, which implies a more primitive life form, one that existed before cell nuclei developed.

Language Objective:

Student will contrast **prokaryotes** from **eukaryotes** using the following types of sentence structures:

Both are..... (living organisms)

Both (have DNA), but (the DNA in prokaryotes is loose, and the DNA in eukaryotes is contained in the nucleus).

The DNA in prokaryotes is (loose), whereas (while) the DNA in eukaryotes is (contained in the nucleus).

Greek and Latin morphemes and their meaning are very important to teach students, because they are invaluable to help students learn to break down, remember and understand content specific terms. The lesson about prokaryotes and eukaryotes, present in all biology curricula, should remind teachers that students will remember technical vocabulary more easily if these derivations are explained to students.

Example 9

Physical Science Content Objective: How does a change in mass effect the velocity of the car?
<i>Language Objective:</i> Students will describe results of an experiment manipulating variables using the words <i>hypothesis, control, experimental, independent and dependent variables</i> , and the structure word <i>as</i> . (<i>As the mass increases,</i>)

When I talk about this example, I remind teachers that some very small, seemingly simple words such as “as” are really challenging to learn to use correctly. “As”, after all, is on the Dolch List (K12Reader, 2012) of commonly used words that children are expected to read by sight by first grade, so most teachers think of it as a simple word. It is not obvious to children how “as” is used or what it means. Science teachers can help, as in the above example.

Also, I stress to teachers that the above examples are not fill-in-the blank exercises. Providing stem starters or sentence frames such as *As the mass increases,...* helps students in the acquisition process, but they need to always be required to speak and/or write the whole sentence, with the goal of eventually removing the stem starters and sentence frames.

Helping Teachers Write their own Language Objectives

Once I give teachers a number of examples that come from their world, I give them a worksheet that is designed to help them start working on language objectives for the content that they teach. The worksheet follows, with an example of answers based on the bat example mentioned above. Relating language function to Bloom’s taxonomy is helpful to teachers because they have all learned about it, and it helps them to conceptualize language function.

Writing Academic Language Objectives Worksheet	
1. What is your content objective? (How bats differ from other animals)	
2. What would you ideally like the students to say or write at the end of the lesson? <i>(Even though they are mammals and don’t have feathers, bats can fly.)</i>	
3. What language function do you want students to use?	
New Bloom’s Taxonomy	Possible Language Function

1. Remembering	define, list, label
2. Understanding	describe, report, paraphrase, explain
3. Applying	interpret, generalize
4. Analyzing	compare, contrast, differentiate
5. Evaluating	evaluate, decide, predict
6. Creating	synthesize information

4. What vocabulary and language structure will your students need to say or write their answer?

Vocabulary: **bats, mammals, fur, feathers, actual wings**

Language Structure: **even though, although**

5. Language Objective (SWBAT + language function using + vocabulary + language structure)

SWBAT compare bats with other animals using the words *bats, mammals, fur, feathers, actual wings* and the function words *although* and *even though*.

This discussion about language objectives that include vocabulary, language structure and language function is just an introduction. EdTPA (Stanford Center for Assessment, Learning and Equity, 2013) refers also to the discourse level of academic language, although it does not do a thorough job of explaining what it means. My colleague Cynthia Lundgren describes discourse as the most challenging of texts. She states that it “requires a larger view of the text and its purpose. Key components include: text structure, organization, voice and register, lexical density, clarity and coherence, purpose, functions and audience (personal communication, January 24, 2014). Once your teachers are comfortable with language objectives, you will want to introduce them to teaching students the elements of discourse structure.

The wonderful thing about Common Core and edTPA is that the establishment is now stressing that the expertise area that ESL teachers specialize in reflects academic language use that all students need. Take advantage of this recognition and use it to empower you in your school. Your colleagues and your students will be grateful.

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