

Linguistics in the English classroom: The view from Room 202

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A. Students and teacher as researchers An ideal educational environment is one in which teacher and student are equally engaged in the topic at hand, even if for different reasons. In many English classrooms, this can happen through shared inquiry into a text and in the process of writing. While this is an important part of the English classroom, we believe that an overlooked area is the study of language itself. Students enjoy the challenge of problem solving, and they pose questions that ask the teacher to learn more about theories of language and how children learn—a satisfying inquiry in its own right.

In this paper we describe work that we have been doing for the past five years at Seattle Country Day School, a K-8 independent school. Wayne O'Neil and Maya Honda have developed a series of linguistics problem sets that tell a connected story about language. These problems ask students to think in a descriptive way, with the primary goal not to make them better readers or writers, but to give students another, scientific way, to think about language—a means of expression that some students require.

B. Listening to students Students respond to these problems in predictable ways, to be sure, but each class also extends the conversation in its own way. We listen carefully to their ideas and help students build their theories with the knowledge they have—linguistics from the bottom-up. These problems are introduced as conversations, where every participant has their ideas validated by including them in a group note-taking effort and preserving them for posterity with a digital recorder. When students see their ideas written on an overhead or chalkboard, they can use this information to build on each other's theories.

We encourage cooperation in each class and across the grade. In small groups, some students are more likely to wrestle aloud with their ideas. Partners help each other come to some sort of workable solution, and then present it to their peers—very much like the way most science is done. At SCDS, fifth-graders travel to specialist teachers for all of their classes, so we see three different groups of fifth graders in the course of the day. We share the discoveries of each class across the grade, and students learn that there are even more paths to take in the process.

C. Linguistics lessons are interspersed with the other elements of the fifth-grade English curriculum, but work best when taught in two thematic blocks: morphophonology and syntax. We also include dialect problems like New England /r/ and Appalachian *a*-prefix. However, here we will focus on a morphophonological problem set—plural-noun formation in English.

C.1. Plural-noun formation in English We begin by asking the class for the rule governing the formation of plurals in English, and the first response is always, "Add *s*." At this point, the notion of inflection in general is introduced and distinguished from potentially confusing ideas like compound word formation. Contrasting English with other, more inflection-rich, languages is another direction to take this conversation. At

some point, however, someone will mention that the add-*s* rule does not always work for all words, and so a conversation about regular and irregular plurals follows. We talk briefly about language change and other lexical sources for irregulars, but explain that scientists will exclude some information for the purpose of illuminating a larger idea, in this case, the default rule for plurals. Of course, students will also bring up spelling differences, but we direct them to the sounds of the plurals and introduce the three different regular plural endings. Generally they discover the variants on their own, but if they don't, we give them examples in context:

All of the *spoons* and *cups* and *dishes* are on the table.
There are *goats* and *horses* and *cows* on the farm.

We elicit more plurals from the group for a categorization exercise, and add to it with a list of our own:

graph	myth	wish	lunch	rock
shape	rib	room	snake	star
tree	dove	cloud	law	kiss
watch	lie	breeze	box	bus
rat	bell	judge	pig	toe
brush	hen	fuse	day	crew

C.2. Phonology 101 Solving this problem requires that the student think about the sounds of language. The categorization of words into plural forms proceeds easily enough, but arriving at a theory which governs this requires a vocabulary for discussing speech sounds. Early in the school year, the class gets a primer in phonology. We challenge the students to find all of the phonemes in English (46, including three glides), talk about how speech sounds are produced, and introduce distinctive-feature analysis. It is easy for students to see how switches like [voice] and [strident] can be turned on and off, and they remain blissfully ignorant of trickier features like [coronal]. Of course, many forget the language used to describe sounds by the time we encounter the problems, but they have no difficulty coming up with their own names for the features. Whooshies [strident], teeth blowing sounds [strident], ongoing sounds [continuant], and vibrating sounds [voice] are just some of the terms devised in this phonology from the bottom up approach.

C.3. Hypothesis formation Most students build an initial hypothesis that looks something like this:

- /z/ — follows a [+ voice] sound
- /s/ — follows a [- voice] sound
- /iz/ — follows some sort of sound that they define using a whole host of terms

The order of these categories is important, and if they haven't come to it on their own, we prompt students to put the three elements in a logical arrangement. To simplify matters, we tell the class that the final sound of the singular form that they have assigned /iz/ to is called a sibilant and is comprised of the features [+strident] [+coronal]. The students realize that a revised hypothesis requires that we first define the ending associated with /iz/ and then add [+/- voice] elements. We then go on to define the conditions that a

counterexample would take, and, finding none, everyone feels good about their work—until we remind them that in the beginning we said that forming the plural in English meant adding /s/.

C.4. Student v. expert Inquiry science, and a constructivist pedagogy in general, can be plagued by one of two problems. On one hand, there are classrooms where all ideas are accepted, but students sometimes end up with ideas that are at odds with an informed perspective. They never get to see the expert view of things. On the other hand, there is also a tendency to disregard the work of students because it doesn't come close enough to the expert view, leaving many students dissatisfied when their work doesn't match teacher expectations. Rather than erring on the side of student or scholar, it is possible to fuse both types of idea construction through meaningful teacher-student dialogue (Zhorik 1997). Working on this plural problem, students feel good about achieving some sort of satisfactory conclusion, and later get exposed to the following expert hypothesis:

- | | |
|-------------------------------------|---------|
| a. Add /s/. | bus/s/ |
| b.1. Insert /i/ between sibilants. | bus/is/ |
| b.2. Voice /s/ after voiced sounds. | bus/iz/ |

To really throw them a curve ball, you could initially switch the presentation of b.1. and b.2., but, beware, the people will scream and cry and beg for mercy. And love it.

C.5. Extensions While working through the initial plural problem some students are likely to discover that there are categories of irregulars. It is really nice at this point to initiate an investigation into these patterns. They learn that some plural forms, like *deer*, *children* and *oxen* are absolute exceptions, but find that we can generalize about the morphophonology of partial irregulars like *life*, *knife*, *bath*, and *house*. Later, when students discover that in English past-tense formation is also governed by an underlying morphological rule that goes through similar phonological adjustments, they feel a great deal of pride in working at the edge of the morphophonological frontier and use the term with abandon.

Comparing English to other languages is rewarding, especially when students speak another language at home. Nicaraguan English offers pluralization with a dose of syntax and semantics; Spanish give the students access to a language with a different set of phonemes than English; and languages like Cherokee and Mandarin Chinese offer even more opportunities for cross-linguistic and cross-cultural connections.

C.6. Connections to big ideas about language Learning general principles of language like voice assimilation is refreshing to students. Questions about the acquisition of language are a familiar refrain in language class. In fact, connecting these problems with language acquisition is major goal of this work (Honda and O'Neil, 1996). Fifth graders often have young siblings that are overgeneralizing rules like past tense or adhering to familiar patterns of phonological development like dropping the /s/ in consonant clusters. These are times when we trot out linguists like Steven Pinker and Jean Berko-Gleason, and talk about the extensive research that has been conducted on these phenomena. Testing them with Berko-Gleason's famous wug test (Berko 1958) gives them insight into bigger topics like Universal Grammar, even if she wasn't thinking about it at the time of her research.

Presenting students with the following set of hypotheses also helps them to think about the big ideas of language:

Which of the following statements (adapted from Halle and Clements 1983: 69) best matches your hypothesis about the unconscious knowledge English speakers have about plural noun formation? Why?

Hypothesis A: English speakers memorize the plural form for every noun as it occurs in their experience.

Hypothesis B: English speakers learn the plural form on the basis of spelling. That is, if a word ends in the letter b, they know that they have to add the plural ending /z/.

Hypothesis C: English speakers know that the final sound (rather than the letter) of a singular form determines the pronunciation of the plural ending. That is, they have memorized a list of English speech sounds to be followed by the ending /s/; another list to be followed by /z/; and a third list to be followed by /iz/.

Hypothesis D: English speakers know that if the final sound of the singular form is of a certain type, the plural ending will be /s/; that if the final sound is of another type it will be /z/; and that if the final sound is of a third type it will be /iz/. In other words, the speakers have not memorized three lists of speech sounds in order to form plural nouns. Rather they have figured out which sound types are relevant for plural noun formation in English.

Conclusion Problem-solving of this sort never gets stale. Working with familiar material gives the teacher insight into the way in which students approach a problem. This year a class took this same plural problem and crafted a visual hypothesis. Soon everyone was making flow charts and asking to share them on the overhead with their peers.

The benefits of a constructivist approach to language are clear. Students get excited about working together to find answers to interesting questions; parents are pleased that their children are excited; and teachers continue to broaden their knowledge of language and learning. But this is not all. Across the hall from our world of linguistics—Room 202, is Meredith Olson, a beloved science teacher at SCDS. Recently Doc O had this to say about the prevailing teaching philosophy at SCDS:

Inquiry science, by its very nature breeds a tolerance for divergent views and just treatment for all. Inquiry discussion requires that we not simply wait our turn for others to finish their reporting, but it requires that we listen with care and graft their findings on ours until a rational and considered theory emerges. Inquiry instruction inculcates the humane, rational, thoughtful, considerate mindset we hope to nurture in all citizens.

Though these remarks reflect her experience in the science lab, incorporating this spirit of discovery into the English classroom is possible and can yield the same positive attributes.

References

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