

Learning By Doing

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Students in the United States believe that teachers should supply them with facts, illustrations and the specific means by which they can successfully complete an assignment. There is an excellent reason for that belief: teachers in the United States generally supply students with facts, illustrations and the specific means by which they can successfully complete an assignment. Unfortunately, the problems that one faces in life and at work do not come with instructions for their solution. In short, what happens in American classrooms frequently has little bearing on what happens outside them. When evaluation measures depend on memorization and replication, there is little motivation for creativity, imagination, and objective thought.

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Consequently, high school and college graduates often have great difficulty applying what they have learned in new situations. They also expect problems to be readily solvable, and they are quick to blame themselves or teachers or someone else if they can't find the right answer in twenty minutes. Complexity often paralyzes them because they have few tools to break down problems into manageable parts.

One of the things I learned very early as a teacher is that students need to have practice and experience dealing with unknowns, with problems that have no clear answers, and with evaluating competing approaches to find the best one for the circumstances. I also learned that my function is not to supply students with the right answers or even with the formula to arrive at the right answers. Rather, I need to act more as a guide, helping students figure out how to solve a problem and discover by themselves the principles that best describe the data under investigation. In that way, students become better able to cope with new and different problems, which will always occur.

As an illustration of what I mean, consider two approaches that might be used in teaching some basic facts of English grammar. One approach begins with definitions like those in (1)

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(1) a. The subject of a verb is the person or thing that performs the action in the verb.

b. The object of a verb is the person or thing that receives the action in the verb.

Given (1), students are asked, in an assignment, to find the subjects and

objects in sentences like (2).

(2) The dogs frightened the little girl.

Applying (1) to (2), students identify the dogs as the subject phrase because they are causing the fear, and the little girl as the object phrase because she is experiencing the fear. The approach, therefore, seems successful. The students have memorized some formulas, the defini-

Practice How You Teach

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On November 16-17 Miami University in Ohio hosted the 20th annual Lilly Conference on College Teaching. Founder and Director, Milton Cox, urged participants to listen to the voices of 138 presentations involving 192 different presenters "as they discuss needs, definitions, theories, research, stories, and ways to apply these ideas in our classrooms, institutions, and scholarship. While you are here listen, debate, and reflect. Then take the dialogue home to your campus."

Unlike most conference in which the teacher paradigm is regnant, Lilly's format offers interactive presentations and includes, wherever possible, a diversity of theoretical approaches. The idea is to practice (not what one preaches) but how one teaches. What sets this gathering apart from "content area" conferences is the collective determination to produce an intellectual tone toward education

that is devoid of contestation and territorial imperative. Conference presentations are therefore enacted in representational ways that evoke learning communities and classroom situations. To the extent that individual sessions are configured rhetorically by teaching actors and learning audiences, the epistemological model is a theatrical one. Lilly Conference presentations are intended to enfranchise their participants rather than place them in a passive student position. The conference medium at Miami is the educational message.

For more about the November 2000 conference dialogue, see the Lilly web page for abstracts of individual sessions: www.muohio.edu/lillyconference/. For expressing interest in attending the 2001 November conference in Oxford, Ohio, contact Susan Awbrey.

CALL FOR NOMINATIONS 2001 TEACHING EXCELLENCE AWARD

The Senate Teaching and Learning Committee is pleased to announce a call for nominations for the 2001 Teaching Excellence Award. One award will be made for the academic year 2000-2001 to a full-time tenured or tenure-track member of the Oakland University faculty. The award includes a cash stipend of \$2500 and will be presented at the Fall 2001 commencement.

Nominations may be made by any member of the Oakland University community, including students, faculty, alumni, and staff. Faculty may not self-nominate for the Award. The letter of nomination should address the nominee's accomplishments based on the following criteria: superior teaching; innovative instructional practices; high educational standards; productive learning environment; demonstrated ability to inspire and motivate students

Student nominations are a highly valued component of this process. Faculty are encouraged to announce the nomination process in all classes.

The Committee will contact the nominees and chairs of their departments to request additional information. Previous Teaching Excellence Award winners and current members of the Teaching & Learning Committee are not eligible. A plaque containing the names of previous Teaching Excellence Award winners is on display in the lobby of Kresge Library.

Nominations will be accepted through January 16, 2001. Letters of nomination should be sent to: Teaching & Learning Committee, Attention: Prof. James Hansen, 479 O'Dowd Hall, Oakland University, Rochester, MI 48309-4493. For more information contact Prof. James Hansen at (248) 370-3071 or at jthansen@oakland.edu.

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tions in (1), applied them in exercises, and learned a tool that can be reused elsewhere.

The difficulty is that English also has sentences like (3).

(3) The little girl feared the dogs.

In (3), the dogs are still causing the fear and the little girl is still experiencing the fear so it seems, according to (1), that the dogs is still the subject phrase and the little girl is still the object phrase. If that is correct, then we cannot say that subjects precede verbs in English and objects follow, which seems to be the case in most sentences. So something is wrong. Since students do not know how or why the definitions in (1) were proposed in the first place, they generally have no idea what to do when the definitions seem to fail as they do in sentences like (3).

Consider now an alternative approach which begins by looking at the data, that is, good sentences like those in (2), (3), and (4), as well as bad sentences like those in (5), where the asterisk means that the sentence is ungrammatical.

(4) a. They frightened her.

b. She feared them.

(5) a. *Them frightened she.

b. *Her feared they.

Given data like the above, it is clear that words like she and they must be distinguished from words like her and them. All native speakers of English know this fact unconsciously whether or not they have studied English grammar in school. They know that sentences like (4) are good and those like (5) are not; so they say (4), not (5), even though they usually cannot explain why. As a result, distinguishing the two groups of words is a necessity for a speaker of English, not a convention or convenience. The distinction is part of the English language; it is not something that teachers of grammar made up.

Since the two groups of words exist, suppose we give them each a name. Notice that there is nothing odd about this: we have names for all kinds of groups (animals, food, laws, sports, etc.). Suppose we call words like she and they "subject pronouns" and words like her and them "object pronouns." With these new names, we can now succinctly state the distinction between subject phrases and object phrases, also a necessity if one wants to be a speaker of English. Consider (6).

(6) a. Subject phrases are specified by subject pronouns (she, they, etc.)

b. Object phrases are specified by object pronouns (her, them, etc.)

Given (6), students attempt to replace phrases in sentences like (2) and (3) with pronouns. The result is always sentences like (4), never (5). Therefore, students, like native speakers, immediately know what the subjects and objects are: if a phrase is specified by a subject pronoun, then it is the subject; if it is specified by an object pronoun, then it is an object. In addition, students learn that the principles in (6) are motivated by facts about the English language, specifically the distribution of the two groups of pronouns.

The approach just illustrated gets to the heart of the matter and the result is worth repeating. Grammatical facts are not the result of convention, whim or convenience. They are a necessity; indeed, they are a biological necessity. The sentences of every human language are broken up into phrases like subject and object because the human brain cannot process unstructured material very well. Try, for example, to recall the numbers in (7) after just one reading.

(7) 1 - 4 - 9 - 2 - 2 - 0 - 0 - 1 - 1 - 8 - 1 - 2

Now try to recall the same numbers in (8).

(8) 1492 - 2001 - 1812

The numbers in (8) are much easier to recall and process because they have structure. In a similar way, the sentences of human languages must be composed of structured units like subject and object. Unstructured sentences without phrases are incomprehensible to human brains. Just try processing the last sentence backwards. In short, languages have grammar, because human biology demands it. Phrases which teachers of grammar arbitrarily call "subject" and "object" would exist even if there were no teachers around to describe them.

The two approaches mentioned above have been called deductive and inductive. In the deductive approach, one begins with the principle (rule, theory, definition, etc.) and tries to apply it to the data. We

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began with (1) and applied it to (2). In the inductive approach, one begins with the data and tries to discover what the principle (rule, theory, definition, etc.) is. We looked at good sentences like (4) and bad sentences like (5) and then formulated (6).

Since the principles in (6) are objective and explicit, they are verifiable. Testing them with other data reveals that they are, in fact, more robust than the definitions in (1), which fail in a great many cases:

- (9) a. The stewardess is cooking the meals. She is cooking them.
 b. The meals are cooking. They are cooking.
- (10) a. The laundress is ironing the shirts. She is ironing them.
 b. The shirts iron easily. They iron easily.
- (11) a. The waitress tasted the potatoes. She tasted them.
 b. The potatoes tasted fine. They tasted fine.
- (12) a. The girl broke the windows. She broke them.
 b. The windows broke. They broke.

The inductive approach supplies students with an exercise in problem solving, critical thinking, and objective analysis. It has the potential of uncovering important generalizations like the principles in (6) and of helping students understand that such principles are justifiable and, in fact, inevitable when they are driven by an empirical investigation of the data. As a result, rather than learning something by rote, students can develop skills for life-long learning, skills that can help even when there are no teachers available.

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