

DOCUMENT RESUME

ED 281 198

CS 210 414

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TITLE The Odd Couple: How We Teach and How They Learn.  
PUB DATE [82]  
NOTE 12p.  
PUB TYPE Viewpoints (120)

EDRS PRICE MF01/PC01 Plus Postage.  
DESCRIPTORS \*Content Area Writing; Educational Strategies; Educational Theories; \*Language Processing; Language Research; \*Learning Processes; Learning Strategies; Reading Writing Relationship; \*Teaching Methods; Writing Exercises; Writing Improvement; \*Writing Instruction; \*Writing Processes; Writing Skills

ABSTRACT

The best way to teach writing is to make it the way to learn something else. Instructors need to look at written communication as it is used in real life. When students take pains with their writing, it is because what they have to say is important to them. The students' need to communicate a particular meaning for a particular purpose guides them through the writing process, but this fact may be ignored in writing classes. Instead, class time is often devoted to the personal essay, the descriptive essay, or the narrative, which exist as isolated language samples, cut off from all experience and purpose. Instructors can make an impact on their writing classes (1) by making writing an integral part of every course and using this writing to communicate to the teacher what the student has learned (establishing that if students cannot communicate, they will not pass); and (2) by dramatically increasing the amount of classroom reading and writing. Students should write a minimum of 1,000 words a day, and this writing should not be discussed by the teacher beyond asking constructive questions. Although these options are being used, neither will become current until instructors rid themselves of the notion that they can talk students into learning to write. (Seven references are included.) (AEW)

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## The Odd Couple: How We Teach and How They Learn

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In 1949, Gilbert Ryle suggested two types of knowledge. He called the first "knowing that," and the second "knowing how." Knowing the rules of logic is knowing that, and being able to reason is knowing how.

In 1958, Michael Polanyi suggested two types of knowledge. He called the first "explicit," and the second "tacit." Explicit knowledge is that knowledge we can readily call to mind, that we can discuss. Tacit knowledge, on the other hand, is knowledge that shows itself more in doing than in saying. Recognition of faces is tacit; describing faces is explicit.

In 1982, Douglas Hofstadter suggested two types of knowledge. He called the first "declarative," and the second "procedural." Declarative knowledge is knowledge that we have stored somewhere in memory. Procedural knowledge exists as a set of routines and subroutines in the mind which, when done in sequence, result in an act (though the act may not necessarily be physical).

Are these scholars trying to tell us something? I believe so. Though there is some difference in the way each approaches the subject, it seems clear that Ryle, Polanyi, and Hofstadter are describing the same phenomenon: two types of knowing -- one verbal, retrievable, discussable, stored intact in the mind; the other non-verbal, non-retrievable, mute, scattered all over the mind. One is display; one performance.

My thesis is that the skills we associate with writing are more properly procedural than declarative, tacit than explicit, knowing how than knowing that. We have been seduced by the fact that we use words in writing into believing that writing itself is verbalizable, and can be taught by being talked about.

Let me illustrate by referring again to Douglas Hofstadter, speaking about grammar. He suggests we have two grammars: a declarative one and a procedural one. The declarative grammar, if we have studied our lessons well and diagrammed our sentences perfectly, allows us to unerringly spot a split infinitive, recognize a noun, or parse a sentence. The grammar we actually use to produce discourse, on the other hand, does not exist as a set of explicitly storable and stored rules at all. Rather, the procedural grammar exists as a set of routines, which, when followed, result in a grammatical utterance. Nor does there seem to be any crossover. We learn a declarative grammar in school, but the overt, learning of that grammar does not seem to transfer to our procedural grammar.

If Hofstadter and others are right, then we have been working under a deep and profound misunderstanding of how not merely grammar and usage are acquired, and used, but all language skills. Such a misunderstanding can lead to a confusion in method. For instance, in the 60's and 70's, the clarity and grace of transformational grammar led many teachers and not a few scholars to believe that there were tiny T-rules and P-rules in our heads which operated on our innermost thoughts, passing an utterance from transformation to transformation until it popped out our mouths or the nibs of our pens as articulate language. If there are T-rules, it was reasoned, and if we can discover them and teach them, then we can facilitate language

learning. Experience proved that transformational grammar worked no better than traditional grammar in helping people learn to write (and traditional grammar had worked not at all).

Of course, there are those who do not agree with me that teaching grammar does no good to help people write. In fact, the subject is a matter of some controversy. The question is the extent to which discussion of linguistic principles helps students learn to produce linguistic structures. There are those who simply say, "It doesn't do any good to talk about writing, because you just don't learn to write that way." When pressed for proof of their contentions, these people have been able only to point to the results of innumerable studies which all say the same thing: there is no connection between a person's knowledge of grammar or usage, and that person's ability to produce a grammatically or socially acceptable utterance. But they've been unable to point to much of a theoretical underpinning for their contentions. And among English teachers, data without a theory isn't worth much.

On the other hand, there are those who contend with much spirit that the discussion of grammar can help writers be more fluent, precise, and grammatical. They have a theory to work with, but they don't have the data. When confronted with the data, they maintain that the scholarship which produced the data was shoddy. It is only logical to assume, they aver, that if we can only discuss a concept, we can learn a concept, and that language skills should be no exception.

Both positions are hard ones to live with, because each is vulnerable to the attacks of the other. However, the scholars I quoted at the beginning of this presentation are at last offering us the possibility of a

third choice. It is that choice I should like to discuss.

Let me begin with an initial concept, which springs out of cognitive psychology. The concept is this: humans are hypothesis-making beings. When presented with an array of data of any kind, the human mind immediately begins to order it, to classify it, to arrange it into hierarchies, and to guess about its significance, about its relationships to us and the world. I was going to say that we can no more stop making hypotheses about the world than we can stop breathing, but that analogy is wrong, because this hypothesizing tendency is not only an instinct, like breathing, it is the very basis for thought and consciousness itself. We can stop breathing, hold our breath, but we cannot stop making hypotheses.

I spend time on this concept because our writing classes at the university level, I think, are based not on these concepts, but on an older one derived from the stimulus/response theories of behaviorism. This can be made clearer if we make plain a number of underlying postulates we adhere to in the teaching of writing, and which are the basis for the vast majority of textbooks loose in the land. Let me give three [I'd like to call them "declarative rules of teaching:"]

1. Material to be taught should be presented explicitly.
2. The material will be learned as an act of conscious will.
3. The material thus presented and learned can be verbalized and discussed, or it hasn't been learned.

Suppose I am teaching an English class, and I want to discuss the principle of the thesis, according to the declarative rules. First, I would give a lecture on the thesis, explaining what it is, what it does, and how to use it. Secondly, following rule two above, I would expect my

students to be able to produce, after the discussion, a thesis, or to identify one on a multiple choice quiz, or in an exercise workbook. According to rule three, I would expect my students to be able to say to themselves whenever they write a paper, "Here I need a thesis. I will construct one according to rules A through D that my teacher, bless him, has given me."

In contrast to the above principles, let me give three which would arise out of the suggestions of Ryle, Polanyi, and Hofstader,

1. The material to be learned should be presented as a means to doing something else.
2. The material to be learned should be presented in the form of problems to be solved.
3. The material to be learned should be presented in the form of examples.

These are "procedural rules of teaching."

In order to show how these rules differ from the declarative rules that are in use even in those English departments that adhere to a "process, not product" philosophy, let me outline briefly how a program based on the tenets of Polanyi, or Ryle, or Hofstader might be run. Remember, all this is based on the hypothesis that writing is a skill rather than a body of knowledge, and is difficult to acquire consciously.

The best way to teach language is to make it the way to learn something else, or the only path to a goal the student wants to take. For years, it puzzled psycholinguists how children would undertake the arduous, frustrating, time-consuming task of acquiring a language. The answer, some thought, lay in a wired-in brain mechanism which clicked on at a particular time in a child's life, enabling that child to acquire language swiftly and

effortlessly. This mechanism, or "language acquisition device," or LAD seemed to be the answer to the question, but LAD had much in common with many stages in the perceptual and cognitive development of the child. So much so that some psychologists and linguists simply said that learning a language was very much like learning to distinguish shapes.

Which still left the problem of motive. Finally, the simplest of all surfaced: the desire, no, the determination -- to communicate. Children learn a language because they need one to communicate.

That same drive exists in our university students. It can be used to teach writing. But it isn't, at least not very well. We continue to teach classes in which writing is the subject, and though we say, "You can't write well until you have something to say," we don't give them anything to say; we give them techniques, or teach them complex subject gathering strategies called "heuristics," none of which makes the act of writing very important to the student. Or, we abandon communication as a goal altogether, teaching our students that "writing is self-discovery."

If we are to really teach our students how to write, we need to look at written communication as it is used in real life. When you take pains with your writing, it is because what you have to say is important to you. Notice that you don't usually need to know what to say, but how to say it, in order to get a job or keep a job, communicate a new discovery, a danday plan for saving the university money, or a paper outlining a new teaching method. In each case, the fact that you must communicate a particular meaning for a particular purpose guides you through the writing process.

We don't do it that way in writing classes. We teach the personal essay, or the descriptive essay, or the narrative; and because of the way

we teach them, they exist as isolated language samples, cut off from all experience, all purpose. They become, in the jargon of composition, "Engfish," language written to please the teacher.

We learn language best as a means to something else. In a university setting, this could probably best be accomplished by disbanding writing classes altogether, and having a writing faculty attached to content classes, trained in both teaching writing and in whichever subject is being taught.

Since I am well aware that if such a proposal were ever undertaken, I would be out of a job, and since only a very few organizations and almost no universities are doing such a thing, let me refer back to two more of the principles I mentioned some time ago:

#### LEARNING BY EXAMPLE

One of them was that we learn things by example. This theory was neatly explained by Hayes-Roth, who outlined how he believes learning by example works. He suggested a number of important points:

1. All the salient features of the thing to be taught must be present in all examples.
2. No non-salient feature may be present in all examples.
3. An explicit declaration of the thing to be taught is not necessary.

Let us go way back to my example of teaching the thesis. According to Hayes-Roth, it is not necessary to discuss the principle of the thesis at all; it necessarily only to present enough examples of the thesis so that all the necessary ingredients of the thesis are demonstrated time and time again, and no extraneous ingredients are included in every example.

In other words, we learn to write by reading. But, we need to expose our students to the types of writing we are going to require of them. The traditional English class reader gives the students writing that may well contain beautiful language, but often neither strong logic nor exemplary construction.

#### LEARNING BY DOING

The second point I made some time back was that we learn by doing. This was illustrated nicely in a study by Anzai and Simon, of the subject working the "Tower of Hanoi" puzzle. This puzzle consists of a board with three rods sticking vertically out of it, and a series of holed discs of varying sizes. At the beginning, the discs are on one of the rods, arranged so that the largest disc is on the bottom, the discs becoming progressively smaller up through the stack. The object of the puzzle is to move all the discs from one rod to the other, ending up with the discs in the beginning order. However, in moving the discs, two rules must be observed: one cannot move more than one disc, and no disc may be placed above a smaller disc.

Anzai and Simon report that the subject had trouble her first time through. However, on successive tries, and without any instruction at all, the subject began creating sophisticated routines and subroutines in her mind as she set and reached her goals. The application to writing is obvious.

If we do learn by doing, then we learn to write by writing. Obvious, you may say. Except that we don't do it. Certainly not in the elementary and secondary schools, where students write about twelve minutes a day.

Even in the university we don't do much. Consider a typical writing class. One semester will have 18 weeks, with three hours per week instruction, and (supposedly) six hours of study out of class. In a semester, a student will be required to hand in about 6000 words, or about 333 a week. That's not enough to make any change in all.

#### CHANGING WRITING CLASSES

There are, then, two ways we will make an impact on our writing classes. First, we could involve writing in our other classes at the university. I'm not talking about writing across the curriculum, which doesn't go nearly far enough. I'm suggesting that writing be an integral part of every class, lots of writing; and that this writing be used to communicate to the teacher what the student has learned; and that if the student cannot communicate, the student will not pass. As university personnel, we need to find out what professional writing consultants already know: you cannot divorce writing from content, and you can't teach writing without teaching content.

The second option would be to dramatically increase the amount of both reading and writing done in our writing classes, and to dramatically decrease the amount of talking about writing. Students should have to read thousands of words, not just any words, but logically arranged, well structured words. Students should have to also write thousands of words, as much as 1000 a day at a minimum. Nor should there be much talk about a student's work from the teacher, no grading or discussion beyond such phrases as "I don't understand this part," or "What's your purpose in writing this? I don't get it." Or perhaps, "Why don't you attack this the

way you think Issac Asimov would?"

Either option is workable. Both are being used. Neither will become current, though, until we rid ourselves of the notion that we can talk our students into learning to write. We must learn to stand back, to let them work it out. We must learn to let them learn.

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