Cognitive Development and the Basic Writer

ANDREA A. LUNSFORD

In her article, "Writing as a Mode of Learning," Janet Emig argues that

> Writing . . . connects the three major tenses of our experience to make meaning. And the two major modes by which these three aspects are united are the processes of analysis and synthesis: analysis, the breaking of entities into their constituent parts; and synthesis, combining or fusing these, often into fresh arrangements or amalgams.[1]

I agree with Professor Emig, and her work as well as that of Mina Shaughnessy has led me to ponder the relationship of writing and the processes of analysis and synthesis to the teaching of basic writers. In general, my study of basic writers—their strategies, processes, and products[2]—leads me to believe that they have not attained that level of cognitive development which would allow them to form abstractions or conceptions. That is, they are most often unable to practice analysis and synthesis and to apply successfully the principles thus derived to college tasks. In short, our students might well perform a given task in a specific situation, but they have great difficulty abstracting from it or replicating it in another context.

Let me offer one concrete example to illustrate this point. Asked to read ten consecutive issues of a comic strip, choose one of the major characters, and infer the basic values of that character from the information provided in the ten issues, typical basic writing students find it almost impossible to articulate anything about the values of characters unlike themselves. In short, they have problems drawing inferences or forming concepts based on what they have read. Instead, they tend either to describe the characters or, more

Reprinted from *College English* 41.1 (September 1979): 449–59. Used with permission.

typically, to drop the comic strip character after a few sentences and shift to what they see as their own values. When I first began teaching basic writers, their response to this type of assignment gave me the first hint of how their difficulties were related to cognitive development.

In *Thought and Language*, the Russian psychologist Lev Vygotsky identifies three basic phases in the ascent to concept formation: the initial syncretic stage, in which "word meaning denotes nothing more to the child than a vague syncretic conglomeration of individual objects that have . . . coalesced into an image"; the "thinking in complexes" stage during which "thought . . . is already coherent and objective . . . , although it does not reflect objective relationships in the same way as conceptual thinking"; and, finally, the true-concept formation stage.[3] Vygotsky cautions, however, that

> even after the adolescent has learned to produce concepts, . . . he does not abandon elementary forms; they continue for a long time to operate, indeed to predominate, in many areas of his thinking. . . . The transitional character of adolescent thinking becomes especially evident when we observe the actual functioning of the newly acquired concepts. Experiments specially devised to study the adolescent's operations bring out. . . a striking discrepancy between his ability to form concepts and his ability to define them. (p. 79)

Vygotsky goes on to distinguish between "spontaneous" concepts, those which are formed as a result of ordinary, day-to-day experiences, and "scientific" concepts, which are formed largely in conjunction with instruction. The student described above by Vygotsky is like my basic writing students confronted with the comic strips in that they all are able to formulate spontaneous concepts, but not able to remove themselves from such concepts, to abstract from them, or to define them into the scientific concepts necessary for successful college work. In my experience, basic writing students most often work at what Vygotsky calls the "thinking in complexes" stage and the spontaneous-concept stage rather than at the true-concept formation stage. While these writers may have little difficulty in dealing with familiar everyday problems requiring abstract thought based on concepts, they are *not aware of the processes they are using.* Thus they often lack the ability to infer principles from their own experience. They are not forming the "scientific concepts" which are basic to mastery of almost all college material.

Jean Piaget categorizes mental development basically into four stages: the sensori-motor stage; the pre-operational stage; the concrete-operations stage; and the formal-operations stage characterized by the ability to abstract, synthesize, and form coherent logical relationships.[4] At the stage of concrete operations, the child's thought is still closely linked to concrete

data; completely representational, hypothetical, or verbal thought still eludes him. As the child moves through the stages of cognitive development, he goes through what Piaget calls the process of "de-centering," a process further defined by Lee Odell as "getting outside one's own frame of reference, understanding the thoughts, values, feelings of another person; . . . projecting oneself into unfamiliar circumstances, whether factual or hypothetical; . . . learning to understand why one reacts as he does to experience."[5] Although children first begin to "de-center" as early as the preoperational stage, egocentricity is still strong in the concrete stage, and, indeed, we apparently continue the process of "de-centering" throughout our lives.

The relationship of Piaget's concrete stage to Vygotsky's "thinking in complexes" stage and "spontaneous-concept formation" stage is, I believe, clear. Furthermore, the work of both Piaget and Vygotsky strongly indicates that cognitive development moves first from doing, to doing consciously, and only then to formal conceptualization. As Eleanor Duckworth says in an essay in *Piaget in the Classroom*, "thoughts are our way of connecting things up for ourselves. If somebody else tells us about the connections he has made, we can only understand him to the extent that we do the work of making those connections ourselves."[6] This notion is directly related to the highly influential work of Gilbert Ryle. In *The Concept of Mind* (New York: Barnes and Noble, 1949), Ryle makes his crucial distinction between knowing *how* and knowing *that*.

> Learning *how* or improving in ability is not like learning *that* or acquiring information. Truths can be imparted, procedures can only be inculcated, and while inculcation is a gradual process, imparting is relatively sudden. It makes sense to ask at what moment someone became apprised of a truth, but not to ask at what moment someone acquired a skill. "Part-trained" is a significant phrase, "part-informed" is not. Training is the art of setting tasks which the pupils have not yet accomplished but are not any longer quite incapable of accomplishing. . . . Misunderstanding is a by-product of knowing how. Only a person who is at least a partial master of the Russian tongue can make the wrong sense of a Russian expression. Mistakes are exercises of competences. (pp. 59-60)

Chomsky's distinction between "competence" and "performance" has similar implications. Chomsky's views as expressed in *Aspects of the Theory of Syntax* (Cambridge, Mass.: MIT Press, 1965) can be used to argue against the notion that "language is essentially an adventitious construct, taught by 'conditioning' . . . or by a drill and explicit explanation" (p. 51). In other

words, students learn by doing and *then* by extrapolating principles from their activities. This theory informs an educational model proposed by James Britton in a recent lecture at Ohio State University (and based on his 1970 *Language and Learning*). Essentially, this paradigm incorporates learning by doing as opposed to learning solely by the study of abstract principles or precepts.

Britton's model is closely related to that articulated in Michael Polanyi's discussion of skills in *Personal Knowledge* (New York: Harper and Row, 1964). Polanyi begins his discussion by citing "the well-known fact that the *aim of a skillful performance is achieved by the observance of a set of rules which are not known as such to the person following them*" (p. 49). Polanyi uses examples of the person who rides a bicycle, keeps afloat in the water, or plays a musical instrument without at all comprehending the underlying rules. "Rules of art can be useful," Polanyi says, "but they do not determine the practice of an art; they are maxims, which can serve as a guide to an art only if they can be integrated into the practical knowledge" (p. 50). Polanyi goes on to discuss the importance of apprenticeship in acquiring a skill or an art, by which he means that we learn by doing *with* a recognized "master" or "connoisseur" better than by studying or reading about abstract principles. Vygotsky puts it quite succinctly: "What a child can do in cooperation today he can do alone tomorrow. Therefore the only good kind of instruction is that which marches ahead of development and leads it; it must be aimed not so much at the ripe as at the ripening functions" (*Thought and Language*, p. 104).

I have attempted this very cursory theoretical review partially in support of the premise asserted at the beginning of my essay: that most of our basic writing students are operating well below the formal-operations or true-concept formation stage of cognitive development, and hence they have great difficulty in "de-centering" and performing tasks which require analysis and synthesis. But once we are convinced that our basic writing students are most often characterized by the inability to analyze and synthesize, what then? How can we, as classroom teachers, use what we know about theory and about our students' levels of cognitive development to guide the ways in which we organize our basic writing classes and create effective assignments?

The theory reviewed above offers, I believe, a number of implications which will help us answer these questions. First, basic writing classes should never be teacher-centered; set lectures should always be avoided. Instead, the classes should comprise small workshop groups in which all members are active participants, apprentice-writers who are "exercising their competence" as they learn *how* to write well. Class time should be spent writing, reading what has been written aloud to the group/audience, and talking about that writing.

Such sessions require an atmosphere of trust, and they demand careful diagnosis and preparation by the teacher. But these suggestions offer only a very general guide. Exactly *what* preparation should the basic writing teacher do?

The best way to move students into conceptualization and analytic and synthetic modes of thought is to create assignments and activities which allow students to practice or exercise themselves in these modes continuously. While an entire course plan would take more space than is available here, I can offer a series of examples, from activities focusing on grammatical categories and sentence-building to essay assignments, each of which is designed to foster conceptualization and analytic thinking.

One reason drill exercises have so often failed to transfer a skill into a student's own writing is that the student is operating below the cognitive level at which he or she could abstract and generalize a principle from the drill and then apply that principle to enormously varied writing situations. Memorizing precepts has been equally ineffective. Instead of either one, why not present students with a set of data, from their own writing or from that of someone else, and help them approach it inductively? Following is an exercise on verb recognition which attempts to engage students in inferential reasoning.

RECOGNIZING VERBS

Read the following sentences, filling in the missing word(s) in each one:

a. The cow _____ over the moon.
b. The farmer _____ a wife.
c. Jack Sprat _____ _____ no fat; his wife _____ _____ no lean.
d. Jack Horner _____ in a corner.
e. Jack _____ over the candlestick.
f. Don't _____ on my blue suede shoes.
g. The cat _____ away with the spoon.
h. Sunshine on my shoulder _____ me happy.
i. Little Miss Muffett _____ on a tuffet.
j. He _____ for his pipe, and he _____ for his fiddlers three.
k. The three little kittens _____ their mittens.
l. Little Boy Blue, come _____ your horn.
m. They all _____ in a yellow submarine.
n. The three little pigs _____ to market.
o. Jack and Jill _____ up the hill.
p. One _____ over the cuckoo's nest.
q. Everywhere that Mary _____ the lamb was sure to _____

Whether or not you recognize the songs and rhymes these sentences come from, you will have filled in the blanks with VERBS. Look back over the verbs you have used, and then list five other lines from songs or rhymes and underline the verbs in them.

1.
2.
3.
4.
5.

Now try your hand at formulating the rest of the following definition: Verbs are words which _____

_____

You may have noted in your definition that verbs *do something;* or you may have remembered learning a traditional definition of verbs. No matter what definition we come up with, though, verbs are essential to our communication: they complete or comment on the subjects of our sentences. Now revise your definition so that it includes the major *function* which verbs have in sentences:

_____

_____

CHARACTERISTICS OF VERBS

In this assignment, your job is to discover some major characteristics of verbs. To find the first one, begin studying the following lists of verbs. Then try to determine what characterizes each group. How do the groups differ?

Group One	*Group Two*	*Group Three*
break	prayed	will go
sweep	climbed	will run
strikes	altered	will fall
say	passed	will listen
heeds	dug	will look
catch	failed	will move
engages	wrote	will organize
operates	chose	will win
arrests	swore	will answer
play	questioned	will ride
reads	promised	will act
study	gave	will sing

Can you state what characterizes each group? _____

_____

_____

If you are having difficulty answering this question, try answering the next three questions first.

The action named by the verbs in Group One takes place at what time?

_____

The action named by the verbs in Group Two takes place at what time?

_____

The action named by the verbs in Group Three takes place at what time?

_____

Now go back and fill in an answer to the first question about what characterizes each group.

By now, you will have been able to identify the TENSE of the verbs in the three groups. Tense, or relation to time, is one of the major characteristics of verbs; it distinguishes them from other kinds of words such as nouns. Do you know the names of the three tenses represented in Group One, Group Two, and Group Three?

This same inductive or analytic approach can be applied to any grammatical concept or convention we wish our students to become familiar with. Rather than asking students to memorize the functions of the semi-colon, for instance, workshop groups can be presented with a passage or short essay which uses semi-colons frequently. The students' task is to isolate those sentences which use semi-colons and then draw some conclusions based on their data: they might be asked to group sentences which use semi-colons in the same way, to define the semi-colon, etc. Whatever the task, the group will be engaged in inferential problem-solving rather than in isolated drill or memorization. In Vygotsky's terms, analytic thinking is the "ripening function" we are attempting to foster.

In spite of their general effectiveness, sentence-combining drills will often fail to transfer new patterns into the basic writer's own writing—unless the sentence-combining work helps build inferential bridges. The sequential sentence-combining exercise below is designed to give students practice in inferring and analyzing. It is based primarily on the ancient practice of *imitatio*, which we would do well to introduce in all of our basic writing classes.

Pattern Sentence: The General Motors assembly line grinds out cars swiftly, smoothly, and almost effortlessly.

A. After studying the sentence pattern, combine each of the following sets of sentences into a sentence which imitates the pattern.

1. The cat eyed its prey.
2. The cat was scruffy.
3. The cat was yellow.
4. The prey was imaginary.
5. The cat eyed it craftily.
6. It eyed it tauntingly.
7. It even eyed it murderously.

---

1. Oil massages you.
2. The oil is bath oil.
3. It is Beauty's oil.
4. The massaging is gentle.
5. The massaging is soothing.
6. The massaging is almost loving.

---

1. We tend to use technologies.
2. The technologies are new.
3. Our use of them is profuse.
4. Our use is unwise.
5. Our use is even harmful.

---

1. H. L. Mencken criticized foibles.
2. The foibles belonged to society.
3. The society was American.
4. The criticism was witty.
5. It was sarcastic.
6. It was often unmerciful.

---

1. The lecturer droned.
2. The lecturer was nondescript.
3. The lecturer was balding.
4. The droning went on and on.
5. The droning was mechanical.
6. It was monotonous.
7. It was interminable.

B. Now fill in appropriate words to complete the following sentence, again being careful to imitate the pattern sentence.

The _____ _____ wins _____

_____ly, _____ly, and almost _____ly.

C. Now write a series of seven sentences and then combine them into one sentence which imitates the pattern sentence. Then write at least one more sentence which imitates the pattern.

Such exercises are not difficult to create; they can easily be adapted to specialized interests of any particular group or class. And they can lead to the kind of paragraph- and theme-length sentence-combining exercises recommended recently by Donald Daiker, Andrew Kerek, and Max Morenberg of Miami of Ohio.[7] Furthermore, such exercises can be supplemented by visual stimuli, pictures or video tapes, which can be used as raw material from which to generate new sentences in imitation of the pattern. But to be maximally effective, sentence-combining exercises must be designed to lead basic writing students to bridge the cognitive gap between imitating and generating.

I have yet to offer any sample essay assignments, but I do not thereby mean to imply that writing whole essays should only occur at or toward the end of a basic writing course. On the contrary, basic writers should begin composing whole paragraphs and essays, practicing the entire process of writing, from the very onset of the course. A pitcher does not practice by articulating one mini-movement at a time but by engaging in an entire, continuous process, from warm-up and mental preparation, to the wind-up, the release, and the follow-through: an analogy, to be sure, but one which I hope is not overly-strained. In addition to having students write paragraphs and essays early in the course, I would like especially to emphasize the importance of working with analytic modes in basic writing classes. Basic writers often fall back on narrative and descriptive modes because these modes are more adaptable to their own experience, or to what Linda Flower has described as "writer-based prose."[8] Yet the work of Ed White in California and of James Britton and his colleagues in England has shown us that little correlation exists in student performance between the spatial and temporal modes of narration and description and the logical and analytic modes of exposition and argumentation. Therefore, the basic writing course that works exclusively on narration and description will probably fail to build the cognitive skills its students will need to perform well in other college courses.

The comic-strip assignment I described earlier in this essay helped me learn that my students needed practice in using and assimilating analytic

modes; it also helped me see that I had made several crucial mistakes in giving that assignment. First, I assigned it when the students had had little or no formal practice in inferential reasoning; second, I asked students to do the assignment at home rather than in workshop groups. In short, I ignored one of the lessons both Polanyi and Vygotsky have taught us: that often we learn best by working at a task in cooperation with a "master" or "connoisseur." I have since profited from these mistakes, and that same assignment, properly prepared for by workshop discussion and practice, has proven considerably more effective. Following are two other assignments, one calling for a brief response, the other for a longer essay, which are designed to help students gain control of analytic modes.

WRITING ASSIGNMENT A

Study the following set of data:

1. New York City lost 600,000 jobs between 1969-76.
2. In 1975, twenty buildings in prime Manhattan areas were empty.
3. Between 1970-75, ten major corporations moved their headquarters from New York City to the Sunbelt.
4. In 1976, New York City was on the brink of bankruptcy.
5. Between February, 1977 and February, 1978, New York City gained 9,000 jobs.
6. Since January, 1978, one million square feet of Manhattan floor space has been newly rented.
7. AT&T has just built a $110 million headquarters in New York.
8. IBM has just built an $80 million building at 55th and Madison in New York.
9. Co-op prices and rents have increased since 1977.
10. Even $1 million luxury penthouses are sold out.
11. There is currently an apartment shortage in Manhattan.
12. The President recently signed a bill authorizing $1.65 billion in federal loan guarantees for New York City.

After reading and thinking about the information listed above, how would you describe the current economic trend in New York City? Using your answer to that question as an opening sentence, write a paragraph in which you explain and offer support for your conclusion by using the information provided in the original set of data.

An assignment like the one above, which gives students practice in analyzing, generalizing, and abstracting, can be readily adapted to workshop groups in which discussion, criticism, and revision can take place.

WRITING ASSIGNMENT B

Preparing: Choose a person (but NOT someone you know well) whom you can observe on at least 5-7 occasions. You might choose someone who rides the same bus as you do, or one of your instructors, or someone who is in one of your classes. Be sure that you are on no closer than "how are you today?" terms with the person you choose.

Gathering Data: Arrange the times you can observe your person so that you can make notes during or immediately after the observation. Note down anything that seems important to you. For a start, answer these questions after each observation.

1. What is X wearing? (Be detailed; include colors, types of fabric, etc.)
2. How is X's hair fixed? (What kind of hair-cut, length of hair, style, etc.)
3. What, if anything, does X have with him or her? (Bag, knapsack, purse, books, etc.)
4. What is X doing? (Be as detailed as possible.)
5. What does X say? (Get exact wording whenever you can.)
6. Who does X associate with?
7. What seems to be X's mood?

Grouping Data: Study all your notes. Then group them under the following headings: APPEARANCE, ACTIONS, WORDS.

Analyzing Data: Now study all the information you have categorized. Based on that information, what would you say is X's lifestyle? What does your observation suggest about X's top priorities? What is most important to X?

Writing About your Data: Write a short essay which begins by answering the questions asked under "Analyzing Data." Use the data you have grouped in your notes to explain and support your analysis of the lifestyle and priorities of X.

This assignment begins with workshop discussion; the results of each stage are discussed by the group. Revision, sorting, and excluding are thus continuous, with the teacher helping students move more and more surely from *describing* their subjects to *analyzing* them. To save space, I have omitted the revising stages, which involve group response to and criticism of the essays and which vary, of course, with the particular difficulties encountered by each group.

Writing projects based on inference-drawing and conceptualization are easily adapted to almost any topic. I have used excerpts from the *Foxfire*

books as the basis for essays in which students draw conclusions and generalize about the people interviewed. David Bartholomae, of the University of Pittsburgh, recommends Studs Terkel's *Working* as the basis for similar assignments building conceptual skills. Role-playing exercises and persona paraphrases offer other effective means of helping students "de-center" and hence gain the distance necessary to effective analysis and synthesis. In fact, it is possible and, I would urge, highly profitable, to build an entire basic writing course on exercises like the ones described above, assignments which "march ahead of development and lead it." If we can do so successfully, and if we can find valid ways to substantiate our success, certainly we will have put all our theory to the best practical use. And as a bonus, we will help to establish what Janet Emig argues is the unique value of writing to the entire learning process.

NOTES

1. "Writing as a Mode of Learning," CCC, 28 (1977), 127.

2. "The Ohio State University Remedial English Pilot Project: Final Report and Follow-Up Study," Ohio State University, 1977, and "An Historical, Descriptive, and Evaluative Study of Remedial English in American Colleges and Universities," Diss. Ohio State University, 1977.

3. Lev Semenovich Vygotsky, *Thought and Language*, trans. Eugenia Hanfmann and Gertrude Vakar (Cambridge, Mass.: MIT Press, 1962), pp. 59-61.

4. *Six Psychological Studies* (New York: Random House, 1967).

5. "Teaching Reading: An Alternative Approach," *English Journal*, 22 (1973), 455.

6. "Language and Thought," in *Piaget in the Classroom*, ed. Milton Schwebel and Jane Raph (New York: Basic Books, 1973), p. 148.

7. *The Writer's Options: College Sentence Combining* (New York: Harper and Row, 1979).

8. Linda Flower and John R. Hayes, "Problem Solving Strategies and the Writing Process," *College English*, 39 (1977), 449-461.