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ABSTRACT

Intended for teachers, this booklet shows how spoken language can affect student thinking and presents strategies for teaching critical thinking skills. The first section discusses the theoretical and research bases for promoting critical thinking through speech, defines critical thinking, explores critical thinking as abstract thinking, and tells how speech activities such as drama and discussion promote abstract thinking. The second section explains the structure and dynamics of small-group discussion, explores three specific thinking skills (reasoning, predicting, and projecting), and describes exercises designed to develop each skill. (EL)

Affecting Critical Thinking through Speech

Clearinghouse on Reading and Communication Skills
Office of Educational Research and Improvement

Speech Communication Association
5105 Backlick Road, Building E, Annandale, Virginia 22003

THEORY & RESEARCH INTO PRACTICE

Affecting Critical Thinking through Speech

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Foreword

The Educational Resources Information Center (ERIC) is a national information system developed by the U.S. Office of Education and now sponsored by the Office of Educational Research and Improvement (OERI). ERIC provides ready access to descriptions of exemplary programs, research and development reports, and related information useful in developing effective educational programs.

Through its network of specialized centers or clearinghouses, each of which is responsible for a particular educational area, ERIC acquires, evaluates, abstracts, and indexes current information and lists that information in its reference publications.

The ERIC system has already made available — through the ERIC Document Reproduction Service — a considerable body of data, including all federally funded research reports since 1956. However, if the findings of educational research are to be used by teachers, much of the data must be translated into an essentially different context. Rather than resting at the point of making research reports easily accessible, OERI has directed the ERIC clearinghouse to commission authorities in various fields to write information analysis papers.

As with all federal educational information efforts, ERIC has as a primary goal bridging the gap between educational theory and classroom practice. One method of achieving that goal is the development by the ERIC Clearinghouse on Reading and Communication Skills (ERIC/RCS) of a series of booklets designed to meet concrete educational needs. Each booklet provides teachers with a review of the best educational theory and research on a limited topic, followed by descriptions of classroom activities that will assist teachers in putting that theory into practice.

The idea is not unique. Several educational journals and many commercial textbooks offer similar aids. The ERIC/RCS booklets are, however, noteworthy in their sharp focus on educational needs and their pairing of sound academic theory with tested classroom practice. And they have been developed in response to the increasing number of requests from teachers to provide this kind of service.

Topics for these booklets are recommended by the ERIC/RCS National Advisory Board. Suggestions for topics are welcomed by the Board and should be directed to the Clearinghouse.

Charles Suhor
Director, ERIC/RCS

1 Theory and Research

When I walk into my classroom every day, I realize I am surrounded by twenty to thirty highly energized people — my students. They are fueled and set to soar if I can but find the right button to push. The challenge never ends. Sometimes it works, and I see the rockets take off. Often, however, the potential soarer moves on to some other teacher, job, or interest, and the fuel is banked for another day. As teachers do everywhere, I struggle with new strategies and time-proven methods to help students develop their strengths. Surprisingly, I am beginning to realize that the answer may lie more in the students themselves than in my lesson plans. The purpose of the program described in this booklet is to provide a way to turn on the students' own "generators" and release the power they already possess.

This booklet first provides a discussion of the theoretical and research bases for promoting critical thinking through speech. The second section explains the structure and dynamics of small-group discussion, then explores three specific thinking skills, along with activities for developing each skill.

The Need for Critical Thinking

I am certain that many teachers share my optimism about the potential for learning in our schools. However, the other side of the story is all too familiar: how teachers don't motivate; how students don't learn to think. The evidence is there in the evening paper: SAT and ACT scores are dismally low; verbal skills are lagging. Mortimer Adler in *The Paideia Proposal* (1982) finds our public schools to be in "deplorable condition." This situation has not changed materially since the 1950s, when Benjamin Bloom listed in his *Taxonomy of Educational Objectives* (1956) a hierarchy of learnings and found the acquisition of facts to be "the most common educational objective in American education" (p. 28). Bloom further maintained that "the more complex and higher categories of the cognitive domain require far more sophisticated learning experiences" than the simple recall of facts. Much more motivation is required and "much more activity and participation on the part of the learner is necessary" (1964, p. 77) if students are to become effective critical thinkers.

In *High School* (1983) Ernest Boyer gives our secondary schools a mixed report card. The top 10 to 15 percent of American students receive an outstanding education which includes learning to remember and respond as well as to think creatively and critically. Of the remaining students, those who get something out of high school (around 60 percent) receive little in the way of intellectual challenge (pp. 38–39). The serious problem teachers face is one of encouraging all students, not just the elite, to move beyond rote memorization and recall into more analytical and probing thinking skills.

Experts and textbook firms suggest various cure-alls: special courses in logic, prepared materials, or computer programs. Such "solutions" treat critical thinking as a separate entity, rather than something that can be integrated with the existing curriculum. It makes much more sense to instead change the *way* we teach our present content courses.

As a starting point, we can direct our attention to the ways in which language, particularly spoken language, can affect student thinking. It has been shown that oral language, used in specific ways for specific purposes, can influence the kind of thinking produced in classrooms. The Affecting Critical Thinking through Speech program is based on that finding. Through this program, which involves a good deal of student discussion within structured activities, it is possible to tap students' natural capabilities and channel those resources toward heightened learning. *And* we can do this without introducing another topic into an already crowded schedule.

To some teachers the idea of students speaking freely, even discussing the day's assignment, brings with it the spectre of wasted time and undisciplined behavior. However, that need not be the case if speech activities are carefully structured, if students are aware of the goals, and if the teacher monitors the process as well as the product.

Critical thinking is not a subject but a means to achieve a result. Therefore, learning to value thinking and speaking may involve a shift of mental gears — for both the teacher and the students. While it may save time if the teacher dictates the correct answers and the students memorize them, more lasting learning takes place if students discover the answers themselves with the teacher's guidance. Sometimes the answers will be different from what the teacher expected. Sometimes the answers will be wrong. But becoming an authentic critical thinker involves taking risks, asking questions, and readjusting previous beliefs. An effective program involves both teacher and students in that process.

Defining Critical Thinking

The qualities of critical thinking defy neat package labels. They don't fit precisely into the box marked "Logic," nor does "Evaluation" work any better, yet both logic and evaluation are aspects of critical thinking. In

Critical Thinking and Education (1981) John McPeck defines the critical ability as "the skill to engage in an activity with reflective skepticism" (p. 152). The difficulty of limiting critical thinking to the study of logic is that logic only helps an individual to justify a thesis or an argument. It doesn't show him or her how to discover problems or formulate questions. Critical thinking moves out of the realm of pure logic by encompassing the consideration of alternatives and the making of conjectures and hypotheses. These processes involve elements that are presently labeled "creative."

The relationship between critical thinking and creative thinking is a fascinating one. Creativity has for some time been considered as separate from the intellectual function, and until now IQ test scores have indicated a low correlation between intelligence and creativity. However, William Gordon's (1961) research into synectics — solving problems through creative thinking — brings that assumption under question. Creativity is *not* unrelated to intelligence. In fact, solving scientific problems, expressing oneself through art, and thinking critically in general all depend on rethinking in creative, innovative ways. The psychologist Jerome Bruner finds a complementary relationship to exist between intuitive, or creative, thinking and analytical thinking. "Unfortunately," he adds in *The Process of Education* (1977), "the formalism of school learning has somehow devalued intuition" (p. 58). The best way to encourage effective intuitive thinking is to set up an environment in which it is all right to take chances, to experiment, and to make mistakes. This booklet provides guidelines for establishing such an environment and for involving students in imaginative activities that go beyond logic.

This discussion of the value of intuition and creativity points up another drawback to limiting instruction in critical thinking to logic. Logical problem-solving techniques are too compartmentalized. Consider the teaching implied by syllogisms: that conclusions may be validly inferred from a set of premises. In the real world problem solving doesn't work out in such set patterns. People may draw correct conclusions from faulty premises, or reach conclusions intuitively, without any idea of how they figured out the answer (Greene 1975, p. 75).

In actual living we do not think in isolation; we always think *about* something. And we need *facts* on which to base our conclusions. To that end, we can't think critically about a subject without pertinent information of that subject and its particular demands for evaluation. For example, does it make sense to ask which has the greater intrinsic value — *Macbeth* or electromagnetism? In studying *Macbeth*, the reader must enter the world of the play, discover its themes, and observe its dramatic structures. Moreover, the reader should also understand character motivation, the history of tragic and comic traditions, and such techniques as dramatic irony. By mulling over these elements, he or she can come to some critical appreciation of Shake-

speare's work. However, these evaluative criteria are of little use in coming to an appreciation of electromagnetism. In that case one's hypotheses and conclusions might be based on knowledge of both the relationship between electricity and magnetism *and* the way electromagnetism can be applied in an electrical device (say, a motor) to produce motion.

The interesting thing, though, is that there *is* an element of commonality in the two processes (that is, understanding *Macbeth* and understanding electromagnetism): both processes involve performing abstract thinking, or "operations," upon the concrete data one is supplied. Proceeding with *this* understanding, then, we might produce a better definition of critical thinking: *those thought processes which involve more abstract operations.* Applying this definition in classroom activities allows the use of metaphorical comparisons and the perception of connotations as well as denotations of experience. Students are thus freed to symbolize experience in a variety of ways.

Critical Thinking as Abstract Thinking

Removing oneself from the here-and-now of experience to express ideas in language is a process of abstraction itself. Interpreting experience, finding commonalities in unrelated happenings, and seeing connections between actual and vicarious events are ways that concrete realities are raised to the realm of the abstract. The capacity to see things in this way can be considered critical thinking.

Various levels of abstraction have been proposed. In his *Taxonomy* (1964), Benjamin Bloom identifies comprehension, application, analysis, and synthesis as higher acts of abstraction. In a related classificatory scheme, Joan Tough of the University of Leeds describes four functions of language that correspond with four modes of thinking that language expresses or promotes (1977, p. 44). These abstract functions (the directive, interpretative, projective, and relational) are expressed through various *uses* of language, such as reporting, reasoning, and predicting. In the latter part of this booklet, three distinctive thinking skills, based roughly on Tough's classification, will be explored in detail. These skills — reasoning, predicting, and projecting — are also the focus of the structured speech activities presented in Part 2.

Abstraction as a Learning Stage

One reason that teachers have difficulty leading students to discover themes in literature or to draw generalizations about historical events is that abstract thinking skills develop according to a maturation timetable. According to Jean Piaget (1966), a child reaches the level of "formal operations" (that is,

abstract thinking) at approximately the age of fourteen. The capacity for formal thought develops over several years, and adolescents just entering the stage typically have difficulty making inferences and hypothesizing.

If lessons and activities are structured properly, the classroom can become the catalyst to foster students' understanding of these abstract processes. The activities presented in this booklet, for example, provide students practice in predicting, imagining consequences, and forming suppositions. At the same time they advance students' thinking from concrete to formal operations. For this purpose, activities involving drama and discussion are most helpful and appropriate.

Drama, Discussion, and Decentering

In the almost-real world of drama, an individual can live safely under several hats and experience others' feelings and viewpoints. The great advantage of drama, or of any role-playing activity, is that it moves the student from an egocentric, or self-centered, position to a sociocentered. or other-centered, one. As will become clear, sociocentrism is a necessary condition for abstract thought processes to occur. What might appear to be simply game playing becomes serious business when we, as educators, recognize this developmental need in adolescents and take the vital steps that will assist in developing more mature, distanced thinking. The high school biology teacher who has her students role-play reporters interviewing Gregor Mendel about his genetic theories is tapping a dozen reservoirs of learning. The social studies teacher whose students simulate congressional debate, or the French teacher whose students dramatize a conversational scene, are promoting more advanced receptivity to ideas.

Structured discussion is another activity that can help students develop their ability for abstract thought. Adolescents take quite naturally to discussions of ideas. If you work with different ages, you'll notice that elementary school chilren are interested in people and places, whereas teenagers are excited about discussing values. Despite this natural interest, though, there is another element involved in the development of abstract thinking: to become effective abstract thinkers, students must become, in Piaget's terms, *decentered* (Britton 1970, p. 232). To "try out" their newly formed ideas and theories, students must move out from self-centeredness. They do this when they attempt to communicate their ideas to others. By engaging in decentering through discussion, students learn the inadequacies of language in expressing life's paradoxes. They also become aware of the power of the word when the word stands for their own conceptions of reality. Douglas Barnes explains that the "human mind develops through a process of decentration, in which the child by incorporating alternative viewpoints into

his own knowledge develops models of the physical and social world which transcend his original more egocentric viewpoint" (1976, p. 91).

James Moffet (1968) also links discourse to the process of decentration. He describes the process in terms of movement (p. 57):

1. From the implicit to the explicit.
2. From addressing the small known audience to addressing distant and different audiences.
3. From talking about present objects to talking about past or potential objects.
4. From projecting emotion from here and now into there and then.
5. From stereotyping to originality, from groupism to individuality.

Drama and discussion exercises, then, perform dual roles. They allow students to sort through their own understandings of the world while exposing them to the world views of their peers. The impact of this social interface stretches students' individual capacity to adjust to new material. A dynamic cycle is set in motion.

Speaking, Thinking, and Learning

Speech activities such as drama and discussion promote the capability for abstract thinking, and if structured with this end in mind can become increasingly challenging. Oral communication improves not only students' facility with language but their facility in maneuvering ideas as well. Vague impressions gain reality when they are defined in words. Speech allows ideas to be picked up and examined, set on shelves in categories, and eventually added to other categories, ideas, or words.

We can't really understand or compare until we can explain. The teaching of language is also the teaching of thinking. Thus, speech has two important functions. The first is interpersonal, or relational: speech allows us to communicate with others. The second is intrapersonal, or ideational: speech allows us to communicate with ourselves. It is this second function with which the program of this booklet is primarily concerned.

Speech has a vital role in children's early development, helping them to construct meanings and to conceptualize the world around them. Naming is crucial during preschool years. Even our concept of self grows through knowing we have a name of our own. Further, naming helps us to categorize the external world. Learning that "kitty" does not stand for all animals is a turning point. Few of us recognize, however, that language continues to define and categorize our world throughout our lives. Language not only increases our lexicon of terminology but also sharpens our perceptions.

Several researchers have addressed the role of speech in cognitive development and have focused on the intrapersonal aspect. Joan Tough's studies, reported in *The Development of Meaning* (1977), initially centered around disadvantaged younger children in England and attempted to discern whether the deprivation of language experiences contributed to subsequent school failure. She found a significant correlation, one which has implications for our own Head Start programs. Tough concluded that the purpose of language in children's development is "that of expressing and constructing meanings, that is, language functions in relation to the child's developing conceptualisation of the world about him" (p. 44). Words create meanings and build understandings. A deprived language system contributes to a deprived grasp of the world around the child, whether the child is three or thirteen.

Douglas Barnes distinguishes "speech as communication" from "speech as reflection" (1976, p. 31). He continues, "Teachers have become so habituated to thinking of language in terms of communication that many have ceased to consider that it also performs important subjective functions, since it is the major means by which we consciously organize experience and reflect upon it" (p. 84). Barnes feels that we grow in understanding by creating representations of our experiences *by* ourselves and *for* ourselves. The speech activities in this booklet are designed to help students do just that — to enable them to actively make meaning from language rather than passively receive it.

Controlling one's *speech* better enables one to control one's *thought* better. Why this is true is not known at the present. Both speech and thinking are imperfectly understood. Nevertheless, educational researchers support the connection between speaking and thinking skills. L. S. Vygotsky (1978) studied young children in an effort to determine that connection. He observed that every psychological development of the child occurred twice: "first on the social level, and later on the individual level" (p. 57). He also determined that interpsychological behavior (between people) preceded intrapsychological behavior (inside the individual). In other words, first we talk to others, and later we utilize the same speech internally. Without talk, the potential for learning is short-circuited or circumscribed.

This connection between speaking and thinking is easier to understand if we look at a young child. The youngster holds a ball out to his mother and says, "Ball." Later he picks up the ball and says aloud to himself, "Ball." This second use of speech is the *intrapersonal* one. Later still the boy converts the word to inner speech and what we call "thought." Intrapersonal speech becomes inner speech, or thinking. Once begun, the conversion process continues, aided by frequent input, to develop a unique inner voice.

Interpersonal communication and our experiences are continually transformed into words. We can then use these words as a means to manipulate our thoughts. It is only when we have given form through language to the

various influences on our lives that we can make order of our interior worlds. Words, therefore, are the tools of thought; until we can control the tools, we are unable to control our minds. George Kelly uses the term "phrasing" in describing the process of giving form to experience through language. He points out the importance of this process in his *Theory of Personality* (1963, p. 77): "The problem of learning is not merely determining how *many* or what kind of reinforcements fix a response, or how *many* nonreinforcements extinguish it, but rather, how does the subject phrase the experience, what recurring themes does he hear, what movements does he define and validations of his predictions does he reap?"

Speaking is intrinsically linked to how we see ourselves. It isn't the outside experience that shapes us so much as our ability to shape the experience to fit our own personality. For example, after participating in a drama exercise, one of my students explained, "I could feel the rage in Heathcliff. I could feel the disgust he had for Linton and the desire for revenge on Edgar. These things drove him, and I could feel that force when I was saying his words." The drama exercise had helped the student to decenter his response to a previously incomprehensible character and to "phrase" the emotions felt by that character.

We mold new experiences to our inner world by language. In discussing an experience, our talk changes the occurrence to fit our present perceptions. We test our understanding of the experience with words we use to explain and describe it. In a discussion of *Wuthering Heights*, for instance, students might say the following:

Laurie: Heathcliff is an example of evil personified. His treatment of Isabella and Cathy proves this.

Kris: No. The cruel way Hindley treated him and Catherine's rejection made him bitter.

John: I think his actions are still too extreme.

As they attempt to explain their experiences of the character, these students are learning not only to express their views to others but to create meaning for themselves.

We do not learn simply by experiencing but by *interpreting* experience. Performing an experiment, learning an equation, or studying the economic development of western Europe will remain that one isolated lesson until the student creates a structure that utilizes the experience meaningfully. As Britton says, "We do not learn from experience left in the raw, unsifted, uninterpreted. Expression, in any form whatsoever, is an interpretation of

experience: we learn in the process of expression itself and we learn also from experience made available, brought to hand so to speak, by being expressed" (1982d, p. 21).

Shaping at the Point of Utterance

Expressive language, even the mere articulation of thoughts, is necessary for us to classify ideas and theorize about our universe. Contrary to the notion "Think before you speak," we find that it is *when* we speak that creative thoughts are produced. Britton calls this phenomenon "shaping at the point of utterance" (1982c, p. 139). This spontaneous shaping is an ongoing interpreting process. Speakers usually are not aware at the beginning of their statements what the exact conclusion will be. Speaking aloud releases peripheral information that the mind has absorbed, and allows the speaker to express him or herself more fully.

Rigid rules for expression in the classroom strait-jacket thinking, thwart discovery, and prevent intuitive thought. In contrast, sharing ideas freely results in the germination of new concepts. Working together on challenging problems, brainstorming, and participating in open-ended discussions all foster the skills of higher abstraction.

The Value of Discussion

The value of group discussion in learning is strikingly illustrated in a study by the Talk Workshop Group at Vauxhall Manor School, a girls' comprehensive school in South London. *Becoming Our Own Experts* (1982) reports that thirty-six students were compared on the "talk" method of learning versus the independent worksheet method. On two separate tests, those who discussed the subject matter showed significantly greater retention than those who worked in silence. No measurable difference of student ability level or problem complexity existed. The single isolated factor was group discussion. This evidence supports the idea that speaking activities designed to promote cognition can be used successfully with all students.

An additional value of group discussion is that strategies learned in groups are transferred to the individual student working alone. The classroom that takes an open approach — hypothesizing, testing, and asking questions — opens up these same techniques to the student thinking independently.

Active Learning versus Passive Learning

If indeed we use language to make meaning for ourselves — if understandings are shaped as we speak — then it is apparent that the students are the ones who should be talking in the classrooms, not the teachers. At the present this

is not the case. Teachers tend to talk for about 70 percent of classroom time. This percentage adds up to something like 8,000 hours of teacher–talk that youngsters listen to during their school years (Stubbs 1976). Besides lecturing, teachers ask questions about things they already know and expect short, predictable answers. Students *do* learn under these conditions, but they learn at the lowest common denominator— passive recall. Shifting the focus to student speech does not negate the value of the teacher. It *does*, however, place a responsibility on the teacher to design an environment in which speaking is given equal weight with writing, reading, and listening. Speech, educators should realize, deserves the same disciplined attention that is given to competency in writing and reading.

Without reducing the content of the curriculum nor drastically altering the materials, we can turn students into active participants in their own education. When we change the *process* of learning, a change in emphasis also takes place: the *how* of learning assumes more importance than the *what* of learning. The students become involved in meaning–making by verbalizing concepts, and/or the teacher promotes their critical thinking by listening to them and guiding them.

The following guidelines for incorporating speech into the curriculum will help in planning lessons:

1. Use speech within the content area.

2. State clear objectives.

3. Assign definite time limits and tasks.

4. Give prompt, explicit, and constructive evaluation and feedback.

5. Integrate speaking with listening, writing, and reading.

The Teacher as Listener

Listening is a key skill when learning through speech, and the teacher must not only help students sharpen their listening ability but also improve his or her own. To this end, teachers will find it helpful to keep the following points in mind: First, it is better to attend to the content of a student's speech rather than to the "correctness" of that speech. An emphasis on "proper" language can inhibit the meaning–making process. In this regard, it is also helpful not to insist on the use of correct technical terms. Discovery of ideas should take precedence over precise labeling.

Second, teachers shouldn't worry if students seem to talk overmuch, or if they fail to grasp an unfamiliar concept in just one activity. Emphasis should be placed on allowing students the freedom to speak, and on letting students approach a question or concept through several different activities.

By practicing listening (and tolerance), the teacher will learn to allow students a trial-and-error method of discovery. In the following transcript of a high school senior English class, the teacher could have told the students that Thomas Hardy used coincidence deliberately to demonstrate his belief that people are victims of chance. Instead the students were allowed to explore the idea on their own:

Mac: Personally, I can't defend the use of coincidence. Tess is working on a farm and meets two of her former friends. Totally by chance. That's unrealistic. Then, when leaving Mr. Clare's, she happens on Alec, an itinerant preacher. That's stretching chance too much.

Colin: Mac, I disagree with you. Coincidence is a literary style. You are dealing with the 1890s. The mode of transportation is walking, not the airplane. They all live and work in a twenty-mile radius. They are backwoods people and don't travel beyond twenty miles.

Jong-June: There is one aspect that has nothing to do with transportation. Tess begins to fall in love with Angel, and Alec appears. She becomes involved with Alec, and Angel shows up.

Mac: That's it! They just pop in . . .

These students are actively looking for incidents to prove their ideas. They are testing ideas against other ideas and trying to establish relationships. This small portion of a transcript gives evidence of true critical thinking.

Besides using structured speech activities, the teacher can also permit students to discuss common problems informally. "Rap sessions" establish a supportive climate and signal that the teacher is willing to be a listener, not just a talker. In that role, he or she can guide students to solve dilemmas in mature ways and prove the advantage of "talking things out." Classes can discuss school elections, senior privileges, exam schedules, or substance abuse. Administrators can be invited into the class to share their viewpoints and listen to concerns. Real tensions are resolved this way, and avenues are opened for continued dialogue.

Conclusion

The most efficient and effective way for learning to take place is to tap the innate capacities of the learner. Adolescents are naturally curious and creative. Their mode for gaining knowledge is through active participation. If we allow them to meld language and life, we will build the bridges necessary for each student to create his or her own meaning to fit his or her own world. Language and thought are linked, and the capacity to understand requires a rich language experience to develop properly. We can't deal effectively with unfamiliar concepts until we can talk about them. We can't talk about new ideas with confidence until we have practiced in a variety of ways; lunchroom and school bus conversation is simply not enough.

Lessons in all subjects can benefit from speech activities. The math teacher can use group discussions for problem solving without sacrificing content. The English teacher can have reading/writing/speaking groups. Students now speak in our classrooms; we just need to improve the methods. Remember, speech is a *process* as well as a product. It not only helps us do what we already do well but helps us do those things better. Once we are aware of *why* speech can result in improved thinking skills, we can devise additional methods. Many fine texts provide hints for improving discussion, structuring open-ended questions, and coordinating group dynamics. However, the teacher who values exploratory speech as well as "final-draft" speech will learn that technique is less important than attitude.

I believe we can create a climate for learning that encourages our students to talk effectively and think critically. Every day they arrive in our classrooms primed with enthusiasm, experience, and emotions. When we utilize those ingredients as the fuse to activate their minds, the distance they may travel is limitless. The boundaries of both their universe and ours will expand as we explore together the unknown territory of the human mind.

2 Practice

The first part of this "Practice" section is devoted to an explanation of the structure and dynamics of small-group discussion. This is followed by criteria for effective speech activities and suggestions for evaluating and responding to students' efforts. Next, three thinking skills — reasoning, predicting, and projecting — are explored. The discussions of each skill is followed by exercises designed to promote the skill.

Group Process and Discussion

Good discussions don't just happen; they are planned. Fortunately, the techniques of planning are not difficult to learn. One thing to keep in mind is that planning should work toward establishing a climate of trust which gives students the confidence to express their ideas orally. Another point is that a variety of learning strategies makes for effective group process; thus, you should feel free to experiment with a variety of methods. What works well for some people may be less successful for others.

There are many specific guidelines for effective group discussion. One of the most important is to give the groups real tasks to perform, real problems to solve. Several other guidelines are presented below under "the three Ps":

Preparation, Practice, and Playback:

Preparation

1. Each individual has some type of pre-discussion responsibility. He or she may be assigned to make notes in a journal, do free writing, produce written responses to readings, or research background information for the group discussion.
2. Students discuss aloud the demands of the task.

Practice

1. Each individual presents his or her ideas in an equitable manner.
2. Group members respond in turn with constructive comments, questions, or requests for more information. In this way, students practice the skills of listening, sharing, and valuing others' comments.

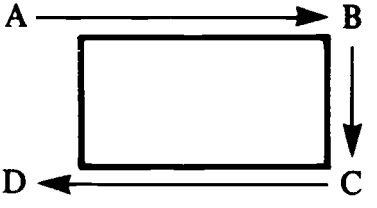
Playback

1. Students report to the class as a whole through informal or formal presentations.
2. Students write in journals or produce free responses.
3. Class members ask questions or expand on the ideas.

Besides following the three Ps, it is well to keep the time limited during activities. This element adds to the overall structure and aids in concentration. It is also well to vary the composition of groups periodically to prevent staleness. Sloppy or careless attitudes develop when the same two or three people work together for prolonged periods.

Also change the leader in a group for different tasks. Expectations change when the leadership role changes. A student who is a nonleader in whole-class activities may function well in directing a small group.

Make sure the students know their responsibilities as members of a group. It is also helpful to assign each person a number or letter when explaining turn-taking tasks. For example, the members of the following group might take turns speaking in a clockwise manner. That is, "A" speaks first, followed by "B," "C" and "D":



Inductive Method of Teaching Group Process

Secondary students are generally turned off by group-process practice sessions in which specific roles are assigned (for example, gate-keeper, facilitator, and summarizer). They regard these exercises as "time-off" games. Using actual content material imbues the discussion with a real purpose and motivates a genuine response.

One way to "turn on" students to group discussion is to show controversial films on current issues or universal themes and then link them to literature or social concerns. After showing a film on civil rights, for example, ask the class to write a ten-minute free response to an open-ended question. Next, hand out a description of the three types of behavior in a group, as listed below. Each type of behavior should be discussed briefly.

I. Leadership Tasks — (Although these are the special jobs of the discussion leader, everyone should be aware of them and cooperate with the leader accordingly.) The leader:
   A. Initiates discussion.
   B. Allows members the equal right to speak.
   C. Keeps the group on topic.
   D. Focuses on issues.
   E. Probes for answers.
   F. Summarizes the conclusions of the group.
   G. Maintains control.

II. Group Tasks — Each member should:
   A. Play a positive role.
   B. Provide information.
   C. Ask questions.
   D. Keep on task.
   E. Analyze — look at details.
   F. Listen actively.
   G. Cooperate with other members to reach the common goal.

III. Negative Behaviors — The following behaviors detract from, rather than contribute to, an effective discussion:
   A. Bullying others into accepting one's viewpoint.
   B. Treating the discussion lightly.
   C. Withdrawing from the discussion — refusing to play an active part.
   D. Monopolizing the discussion.

Next, form small groups, preferably of four or five students each. Give students an evaluation sheet on which they can record the date, the subject under discussion, and their comments. Appoint student A in each group to be leader and allow the groups to discuss their ideas. Using the format previously explained, students A, B, C, and D should read their free responses to the film, each in turn. After ten minutes, stop the discussion.

At this point, have the students evaluate their own performances on the evaluation sheets, trying to be as specific as possible. Next the group members should share their observations about the discussion process within the group. Circulate from group to group to help them over rough spots. In just one period, you can teach the positive aspects of group dynamics without moralizing. Once you have the technique down, you can use group discussion to activate a persuasive essay in an English class, a social studies class, or a science class.

Looking back over notes I've made while teaching students to work in groups, I find comments such as "The smaller the group, the better" and

"Rapport is good, not only between the students and me, but also among themselves." The key to effective group discussion is to reduce the feeling of risk and to increase feelings of well-being. If the activity is successful, self-esteem rises and students learn the benefits of supporting each other.

Physical Environment

The regular classroom can accommodate a number of simultaneous speaking activities. Students who jog, do homework, and eat meals while attached to stereo headphones can learn to work in a classroom where four or five groups are talking at once. In each group, theoretically, only one person should be talking at any time. Having students discuss in pairs instead of groups of four may be a good way to begin. Pairing usually makes for a quieter discussion and allows more time for individual participation. Setting time limits is another way to keep groups on task, reduce the noise level, and promote productive conversation.

Requiring students to produce something (a written observation, a report, or a project) also helps to foster meaningful talk. If space is limited, one group can work in the hall outside the classroom. If you have access to another room, you can place a group there and tape their discussion. This is useful for monitoring the effectiveness of the lesson. Usually, however, it is better to keep all groups working in the same room. This allows you to easily visit the groups and listen to all the discussions.

Psychological Climate

The psychological climate is really more important than the physical. You must convey a strongly supportive attitude toward each student. Every person's contributions must be valued carefully, both by you and by that person's classmates. Trust-building begins the first day of class and continues throughout the year. The time spent on building attitudes of respect toward the rights of others will pay off in all class experiences.

When rapport is established between the members of a pair, you can combine pairs to form groups of four. It's better to vary the composition of the groups, at least at first. By working with different people on different tasks, students eventually find their own learning styles.

Most important, you must set the tone for trust-building. You must believe in your students' ability to learn effectively when they are *discovering* facts rather than being *told* them. You must have enough confidence to allow the unexpected to occur, and you must learn to be comfortable planning more for the *how* of lessons than for the *what*. The following guidelines will help you create a stable climate of trust:

1. Share responsibility with the students for learning.

2. Realize that students can take responsibility for their own learning.
3. Facilitate learning instead of directing it.
4. Control the learning situation instead of dominating it.
5. Demonstrate a positive attitude toward oral communication.
6. Model language use (for example, read literature aloud, prepare extemporaneous speeches, and tell stories).
7. Welcome students' questions.
8. Provide a variety of oral language experiences.

Criteria for Effective Speech Activities

Some general criteria apply to all of the activities presented in this booklet. These criteria are based on the theory that students must have an *active* role in learning. All the criteria listed below may not be met within a given lesson. However, you can still use them as a checklist for planning. The goal is to meet as many criteria as necessary to generate critical thinking.

Frequent Speech

1. Every lesson is designed for an oral response.
2. *Every* student speaks *every day*.

Attitudes

1. Both teacher and students respect oral communication.
2. Students are allowed to reach conclusions and draw inferences that are not predetermined.
3. Exploratory speech (speech that is hesitant or tentative) is valued.

Teacher Skills

1. Teacher uses open-ended questions.
2. Teacher prepares guidelines for oral activities.
3. Teacher has clear criteria for evaluation.

Student Skills

1. Students learn to give and receive feedback.
2. Students understand the objectives and tasks of group discussion.
3. Students experience leadership roles frequently.
4. Students learn to reason, predict, and project.

Speech Experiences

1. Students have a variety of speaking experiences: formal speech, drama, discussion, and informal conversation.
2. Students learn to formulate a variety of questions: probing, validating, and open–ended.

Evaluation and Feedback

One reason that educators feel uncomfortable about speaking activities is that they present a difficult challenge when it comes to assessing their value. Speech is more transitory than writing and is also more difficult to evaluate. The teacher can't carry home the results in his or her briefcase to grade in the quiet evening hours. To be effective, evaluation and feedback have to be done in the middle of the action, and this requires practice as well as patience.

Many of the activities in this booklet can be steps in a process, ways to generate ideas, or means to review subject matter. Your evaluation would apply to the end result of the process — whether it is a paper, a test, or a project. The simplest way to evaluate speaking activities is to determine the specific goals of the activity, place those goals on a form, and check off goals or write in comments in the appropriate spaces. The "grades" can be numbers or letters, depending on the purpose of the lesson. Students appreciate individual written remarks, even if brief, and this kind of communication contributes to overall rapport. The silent student can be praised for looking alert, for taking notes, or for raising his or her hand. Narrative evaluations can effectively replace letter grades as well as increase student self–confidence.[1]

Your role as an active listener allows you time to be a totally involved observer. The goal of reaching 100 percent participation will be reached only if the students feel your support and respect. Positive comments create better results than negative criticism: "You asked two questions today," "Your summary statement helped discussion," or "Your comparison of realism in *Of Mice and Men* to *Wuthering Heights* changed the focus of the discussion." This sort of support and feedback enhances students' awareness of the process and increases their perception of the goals and value of speaking and listening. The program outlined in this booklet promotes learning for both the students and the teacher. Together, you take responsibility for becoming collaborators in making meaning.

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1. For specific evaluation forms, see *Evaluating Classroom Speaking*, by Douglas G. Bock and E. Hope Bock. Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills; Annandale, VA: Speech Communication Association, 1981.

Reasoning

Fitting ideas together, seeing one event as the cause of another, perceiving one concept as being more significant than another, and recognizing similarities and differences are all applications of the thinking skill we call "reasoning." Reasoning is no easy matter. For example, cause and effect may, in a particular case, seem to be quite straightforward, when in reality it is very complex. We observe a tree falling down during a strong wind and say that the wind caused the tree to fall. The reality of the situation may be that the tree's root system had been eroded by a flood, or that the tree was infested by some sort of decay, and the tree's "time had come." Here we must take into account not only the readily observable but also coincidence and alternate causes. Cause and effect has been called "the most complex form of reasoning" (Fryar and Thomas 1979, p. 41).

In this section, we will explore two techniques of use in developing skill in reasoning. These are question making and debate.

Question Making

By their very nature, open–ended questions lead to higher–level abstract thinking. Such questions can be used to explore almost any topic in any school subject, and students can learn to construct questions to fit the subject. Consider the following generative formats:

1. "How would you feel about the attack on Pearl Harbor if you were . . . [living in San Francisco]?"
2. "What if . . . [you were the survivor of a nuclear holocaust]?"
3. "How would you react if . . . [you had your mortgage foreclosed during the Great Depression]?"
4. As the author of . . . [*Jude the Obscure*], how did you decide on the setting?"

Questions of this type force both the questioner and the answerer to work with the subject matter in new ways. In fact, if the questioning is really imaginative, the whole class or group can work on couching the unfamiliar subject matter in more familiar terms which are easier to work with. If students do their job well, the whole class will have less trouble "digesting" new ideas, and it will be easier for the teacher to spot trouble areas in the students' comprehension (for example, anachronisms in the subject matter, lack of background information for discussion, and fuzzy or faulty notions). Using open–ended questioning, classes will actually cover the subject in more depth than when following the teacher–directed "stick–to–the–lesson" approach.

To ensure that the necessary content will be covered, assign groups, rows, or pairs of students to prepare questions on particular areas of the subject. In an English class, for example, you might assign characterization, setting, theme, plot, and symbolism. In science a lesson might be divided into methodology, previous or future experiments, application to environment, and additional tests or proofs. You can then begin the discussion by modeling a few open-ended questions. Once the students grasp the idea, they may devise quite provocative questions. For example, students sent the following questions on *Emma* by Jane Austen:

Characterization:	How does Emma's manipulation of Harriet compare to Mrs. Elton's manipulation of Jane?
Setting:	If you were to produce *Emma* as a modern-day American film, where would it take place and why?
Theme:	What is Austen saying about the role of women, and does it have relevance in the 1980's?
Plot:	How can you compare *Emma* to a modern-day soap opera?
Symbolism:	Select an image from the first chapter of *Emma*. Why is that image significant throughout the novel?

As students manufacture questions, they use their own previous knowledge of the subject. They simultaneously review information and apply it to the new situation. They also test their perceptions against the answers they receive.

Another method of constructing open-ended questions is to take end-of-chapter questions and ask students to twist them around into new formats. This allows students to "play" with questions, as in the following instance:

End-of-chapter question:	Why did Shakespeare not have Lady Macbeth appear in Act IV?
Reformatted question:	Imagine that Lady Macbeth had appeared in Act IV in a prominent role. How would she have behaved?

Among the responses were "Perhaps Lady Macbeth would call a messenger to send a message to Lady Macduff, but he would refuse. This would show her loss of power," and "I think that including Lady Macbeth in Act IV might have heightened the tragedy of the slaughter of Lady Macduff and her children."

Debate and Argumentation

Debate and formal argumentation are an extension of questioning tactics in the reasoning process. These traditionally competitive activities can be adapted to noncompetitive, nonspecialized instructional situations. When groups of students prepare arguments, there is less personal risk, the students (and teacher) have more fun, and discussion is more active and effective.

The problem–solving process usually follows a sequence similar to that outlined by John Dewey. First, it is necessary to explore the background of the problem; second, to identify the causes of the problem; third, to isolate the possible solutions and determine the best one; fourth, to plan a way to implement the solution. Each of these steps requires using higher levels of abstraction.

Analysis is complex, and students must be guided in studying problem/solution tasks. Breaking a whole into its parts is needed in understanding many subjects. To analyze the causes of World War II, for instance, we have to look at all the individual influences: economic, political, and geographic. Students must learn how to question apparently true positions, proposals, and facts. Too often, opinions are derived less from fact and more from media hype or national prejudice. In this particular case, students could develop the following types of questions:

1. What is the extent of the problem?
2. What factors caused the problem?
3. What solutions can correct the problem?
4. What solution would be the best economically or politically?
5. What solution is the most consistent with American traditional values?

Argumentation Theory

The basic criterion for assessing the relative value of one argument over another is that the argument must be supported by facts, examples, and proofs. The person who martials the most data and demonstrates with logic how that evidence relates to the claims he or she is making generally wins the decision. For example, it isn't enough to assert that the lack of bilingual education is causing many Hispanic students to drop out of school; it must also be shown that no other factor causes the high dropout rate. Relationships must be drawn through comparison, cause and effect, and accurate statistical analysis. Students must learn to pay attention to the source of statements used as evidence, the time at which the data was collected, and whether the information fits the present circumstances or state of knowledge. For instance, a physician (good source) states in a 1955 magazine article (probably outdated data) that total bed rest after surgery is necessary.

Subsequent medical research has since discredited that theory (current information overrides old data).

Students must keep the following criteria in mind when preparing for debate: (1) assertions must be supported with valid evidence, (2) information must be accurate and documented (title, author, and date), and (3) chains of cause and effect must be logical.

Debating Questions of Policy or Fact

Just what constitutes a policy? One definition states that "broadly speaking, a policy is a course of action or a set of rules, regulations, and laws designed to guide present and future decisions affecting all the people within the jurisdiction of the policy" (Fryar and Thomas 1979, p. 16). All issues, then, involving spending, law and order, domestic concerns, and commerce fall within the nature of policy, whether national or local. Policies may be totally new or may be old ones altered to fit new conditions. The advantages and disadvantages of such policies are the concern of debate.

Questions of fact may also be debated. The needs of this type of debate, according to Fryar and Thomas, are "to determine (1) what occurred; (2) what data would be required to establish the alleged fact; [and] (3) what data is available for use" (1979, p. 12). An example of a question of fact that is debatable would be the question of whether Macbeth is insane.

In order to defend their positions on a question, students must learn enough to defend *either* side of the question. Besides the fuller understanding that such exploration entails, the value of classroom debate is that students learn to *listen* to arguments, to compare proposals, and to differentiate between opinion and fact, rhetoric and sound argument.

Debating Questions of Value

Lincoln–Douglas debate, one of the reasoning activities that follow, is based on the famed confrontations between Abraham Lincoln and Stephen Douglas. The difference between Lincoln–Douglas debate and traditional debate is that it involves propositions of value rather than policy.

A suitable topic for Lincoln–Douglas debate might be the following: "Resolved, that even in a democratic society, morality can be legislated." In arguing this type of resolution, less emphasis is placed on statistically based evidence and more is placed on various hierarchies of value: social, political, or humanistic. The structure of the argument remains essentially the same: a thesis statement, definitions, three or four supporting facts with examples, and a conclusion. The person holding the negative position does more than refute the affirmative position; he or she also presents a constructive argument on the opposite side of the resolution.

Lincoln–Douglas debate is admirably suited for a social studies classroom as a way to investigate various policies of the past or the present. It forces students to assimilate knowledge of different political theories as they attempt to defend a position on laissez–faire freedom of the press, or the issue of federalism versus states' rights.

Reasoning Exercises

The six exercises in this section are designed to develop skill in the following broad areas: perceiving relationships, cause and effect, problem solving, comparison and contrast, and classification of schemata.

Reasoning Exercise 1: Round–Robin Questions

Goals:

To develop students' ability to generate questions concerning relationships, cause and effect, and reordering of information.

Approach:

This activity assists students in performing inductive analysis on a novel, chapter, or unit of work. Assign sections of students to work independently on devising open–ended questions. If the subject is a novel, one–fourth of the class might think of questions relating to plot conflict; one–fourth, characters; one–fourth, setting; and one–fourth, symbols or imagery. The questions can invite personal responses: "Which scene was most vivid and why?" "If you were going to write a letter to the main character about his decision, what would you tell him and why?" "What mistake did the author make?" In a history class, questions about World War I could be similarly constructed: "If you were a German housewife, what might be your most valuable possession and why?" "You are Woodrow Wilson's wife. What is your most pressing concern?" "Describe a battle scene from a Russian soldier's point of view."

After allowing students five minutes to generate questions, have them write responses to their own questions (another five minutes). Then divide the class in half and place the students in two semicircles facing each other. Person 1 on Side A asks person 1 on Side B his or her best question. Person B–1 answers, then A–1 evaluates the answer and says what his or her answer would have been. Next, A–2 asks B–2 a question, and the process continues until all of Side A's questions are completed. Students on Side B then ask Side A their questions.

Advantages:

The questions and method used encourage divergent thinking, active participation, and many tests of relationships.

Variations:

1. Alternate sides in asking questions.
2. For science and math, questions can be related to interpretation of data on graphs and tables; problem solving using various concepts such as Avogadro's law, or using algebraic concepts to solve problems in perimeter, area, proportion, or distance.

Reasoning Exercise 2: Concoct-a-Question

Goals:

To generate as many questions as possible in a fixed amount of time and to increase students' perception of relationships within a body of material.

Approach:

Divide the class into groups of five. Tell the class that each group is responsible for concocting an unlimited number of questions in ten minutes about a selected topic. In this brainstorming session, no question will be too ridiculous or too simple. After ten minutes, have the groups select the ten best questions generated.

Next, direct the groups to form a large circle. Have all the As sit together, all the Bs, and so on. A–1 asks B–1 the first question from Group A's list. If B–1 can't answer the question, it moves to C–1, D–1, and so on. If no one can answer, A–1 answers and A–2 asks the next question of B–2, C–2, and so on. If B–2 answers the question satisfactorily, he or she asks C–2 (D–2, etc.) the first question from Group B's list. This activity should move quickly and involve all the class members in responding.

Advantages:

Students get practice in asking questions and in active participation. The teacher should also participate in this activity (students love to stump the teacher).

Variations:

1. Have the groups concoct questions for ten minutes. Write the questions on the board by group, and have the groups select which questions they wish to discuss (one for each group). Each group then discusses their

question within the group for fifteen minutes. Afterwards, the group leaders present brief summaries to the class.

2. Same as above, except give Group A's questions to Group B, Group B's to C, etc.

Reasoning Exercise 3: Pairing Partners for Quiz Making/Taking

Goals:

To give students the opportunity to verbalize a topic, to classify, and to create priorities. (This exercise is particularly useful for learning vocabulary or new terms.)

Approach:

Divide the class into pairs. Outline the number and type of items that students may use in quiz. For example, if the quiz is to test vocabulary, you could direct them to make five sentence completion problems and ten matching items (five synonyms and five antonyms). When the quiz is completed, direct each pair to make a duplicate and a key.

The next day, have the pairs exchange and take the quizzes. Afterwards, each group of four (two pairs) should meet and discuss the questions and answers. Scoring, if desired, can be based on the package of work done by all four of the participants. The four can then decide which two, three, or four questions would be best for the entire class.

Advantages:

Students discuss vocabulary and concepts. They must also evaluate responses and relate those responses to their previous knowledge.

Variations:

1. Pairs can present their quiz items to the class orally. This provides the pairs with immediate feedback and more oral practice with new terminology.
2. The items may also be presented to the class in writing.

Reasoning Exercise 4: Group Debate

Goals:

To use basic debate principles without an overly formalized structure, and to reinforce research methods. Students analyze both cause and effect and problems and solutions. They also get practice in perceiving relationships.

Approach:

Select one or two issues about which students have some prior knowledge from class, home, or the media. Suggested topics include the military draft, ERA, capital punishment, nuclear proliferation, drunk driving, child abuse, animal cruelty, environmental preservation, Darwin's theory of the origin of species, capitalism versus communism, and literary questions.

Divide the class in half, or if the group is too large, select two topics and separate the class into fourths. One side is to speak affirmatively and the other side negatively on the proposal which is stated as a debate proposition, for example, "Resolved That: All eighteen–year–old citizens must be required to fulfill a military obligation to their country."

Once students are in the groups, give them ten minutes to write down their opinions on the subject. They should independently record their ideas, questions, and the reasons they favor or oppose the resolution. During the writing period, there should be no talking.

Next, appoint a chairperson in each group. Select someone who will listen fairly to all remarks Each person in turn is to state *one* idea. The chairperson records the comments by placing them in columns headed "Affirmative Arguments" or "Negative Arguments." Both categories are helpful, since to win a debate one must know what one's opponents will argue and be prepared to refute those arguments. After the first round of comments, the students should continue sharing single ideas until all have been stated.

Next, direct the groups to rank the arguments on their side of the proposition from least important to most important. At this time, they should also try to develop answers to the opposition's possible arguments. The chairperson is to record these possible rebuttals also. When the group's plans are complete, the chairperson reviews aloud the notes he or she has made. Then the students draw numbers for speaking order. The last person to speak should be the chairperson, who can summarize the best and winning arguments from preceding speeches.

When the groups are prepared, begin the debate. The following order of events is suggested: The first affirmative speaker brings up the least important argument and explains it for one minute. The negative team then questions the speaker for the same amount of time. Next, the first negative speaker refutes the affirmative argument, followed by the affirmative team questioning the speaker for one minute. Each speaker from alternating sides then takes the floor for a minute, trying to answer the previous arguments and adding or extending his or her own side's position. The last speaker on each side concludes the debate with a two–minute speech refuting the opposition and restating his or her group's case.

If it is necessary to lengthen speech or questioning times, make sure both sides have equal time. The final speeches should be twice as long as the preliminary speeches, whatever their length was. Have the students move their desks so each side faces the other side, then each student can speak from their desk or from the "speaker's lectern" in the front.

Advantages:

Group debate allows students to explore causal relationships and problem solving. It also stimulates the classification of ideas. The immediate feedback permits students to modify their ideas in relation to challenging information. Focus is on the group's position rather than relying on just one or two students.

Variation:

To provide practice in research, have students use library resources to find supporting evidence for both the pro and con positions on topics. Each student could prepare three cards that list a source and evidence from the source. The group members would then pool their data, organize arguments, and proceed as in the usual group debate.

Reasoning Exercise 5: Student Congress

Goals:

To develop skill in problem solving and to develop an understanding of cause and effect and comparison and contrast.

Approach:

The students' task is to write simple bills about social, political, or economic issues. The suggested topics from "Group Debate" can be used. In addition, students can debate other topics, such as genetic research or space exploration. (These particular subjects lend themselves to the science curriculum.)

A bill may be simply stated: "Be It Enacted That: Genetic research will not be limited by governmental restrictions." Sections can be added that include more specific information, such as date of enactment and funding.

When an agenda of four or five bills has been developed, students should be given copies and a chance to do research in the library. The bill's authors should write brief speeches in favor of their legislation. Meanwhile, other class members are to prepare affirmative or negative speeches on the bills. Appoint a presiding officer to oversee the proceedings. The National Forensic League has available a modified chart titled "Most Frequently Used Parliamentary Motions," which simplifies mock legislative debate.[2]

2. Write the National Forensic League, Ripon, Wisconsin 54971.

On the day of the congress, the author of the first bill speaks in favor of his or her legislation. A questioning period of two minutes follows. All members of the "house" participate. It is the presiding officer's job to allow only one question at a time. After the questioning period, debate continues with alternating negative and affirmative speeches of about one minute's length, with a minute of questioning for each speaker. When all the necessary information has been deliberated, a member "calls the question" and the house votes to pass or fail the legislation.

Advantages:

Students get an in-depth look at the underlying causes of important social, political, or economic problems. The "group" consideration makes it easier for some students to practice using ideas to challenge other ideas. Students can change or modify opinions in the course of the debate without being graded — in fact, such changes reflect "desired outcomes" of discussions in the Student Congress format.

Variation:

Students can use an issue presented in a literature text or social studies class instead of a current events topic. The Student Congress could then be a means to review. For the play *Pygmalion* by George Bernard Shaw, for instance, the bill debated could be the following: "Be It Enacted That: No person shall be discriminated against on account of language, dialect, or speech."

Reasoning Exercise 6: Modified Lincoln–Douglas Debate

Goal:

To introduce students to logical analysis through formal refutation techniques. In this exercise, students must support propositions with logic, evidence, and examples.

Approach:

Divide the class into four groups. Give each group a value proposition, such as "Civil disobedience is justified in a democracy." Propositions can also be derived from literature or science: "Hamlet's tragic flaw is indecisiveness," or "Protecting the environment is more important than economic progress." Half of each group will be affirmative, the other half negative. Students should construct arguments supporting their position using theories, examples, and facts. These arguments are to be presented in three-minute speeches.

The following order of events is suggested: A group member holding the affirmative position presents a constructive speech, which a member holding the negative position then cross–examines. The negative side then presents a constructive speech refuting the affirmative position and presenting alternative arguments. The affirmative side cross–examines the negative, then rebuts that position to rebuild the affirmative case. The negative side responds with their own rebuttal. The debate ends with a one–minute speech by the affirmative side. This format takes about twenty minutes; therefore, it is possible to have about two debates in a class period. While one group presents their debate, the other class members are to take notes. They can then critique the debate, declare the winners, and give reasons for their decision. A paragraph justifying the decision allows the teacher to discover how well the students were listening.

The following times are suggested for affirmative and negative speeches:

Preparation Time During Debate (Each Side)	2 Minutes
Affirmative Constructive	3 Minutes
Negative Cross–Examination	2 Minutes
Negative Constructive	3 Minutes
Affirmative Cross–Examination	2 Minutes
Affirmative Rebuttal	2 Minutes
Negative Rebuttal	3 Minutes
Affirmative Rebuttal	1 Minute

Advantages:

Students learn to recognize cause and effect factors, underlying principles, and logical connections. They also learn more effective listening skills.

Variations:

1. Alter the time format.
2. Divide the class into groups of four. Assign two students to the affirmative side of the proposition and two to the negative. One student on each side is to do the constructive portion of the debate, while his or her partner does the rebuttal. Partners may consult with each other between speeches.

Predicting

Recognizing alternative courses of action and determining what consequences may result from behaviors and events involves a level of abstraction called "predicting." Moving mentally beyond the observable present to a

future or past time in order to understand situations better also requires advanced abstraction skills. These skills of prediction can be fostered through drama–related exercises because the interpretation of character demands recognizing subtleties and responding to them, often in an unconscious manner. Successful interpretation is a tangible inferential thinking experience. Only through inference can one convey the author's meaning to others.

Two main types of dramatic activities are used in the predicting exercises. These are role playing and readers theatre.

Role Playing

Drama gives students a chance to play out life. John McCreesh (1977) describes the value of drama as the opportunity to "absorb and communicate experience . . . Through drama the child can be encouraged to play out a variety of emotional experiences, and undergo many imaginative experiences" (p. 118). Both scripted and unscripted exercises may be used. Unscripted drama exercises allow students not only to view past emotions but also to encounter new feelings in a safe way.

Assumed fictitious roles can also suggest dialogue that will become part of the students' internalized speech. I witnessed a good example of this in a British classroom where the children could not learn some standard grammatical constructions. However, when the students role–played "society" people, they naturally spoke faultless English. Drama allows students to vary thought patterns without paying the price of reality. In addition, it doesn't take a drama specialist to use improvisation, role playing, and student–written scripts. For the purpose of developing predicting skills, whole–class acting is less important than dramatic imagination. The *process* is the goal, not performance for an audience.

For the process to work, a climate of trust is essential, since both the teacher and the students fear appearing foolish. Encouragement is a must. Give only positive suggestions, and keep criticism to a minimum. Most of the exercises in this booklet require that the students first place themselves into the roles of the characters through writing. From there, they can move to more sophisticated tasks such as character quizzes or conversations. As they develop their characters, they can elaborate on new situations and relations for their assumed personalities.

Role playing between two characters helps to determine motivations. After students have written a monologue as Macbeth or Lady Macbeth and have read it aloud to their small group or to the class, you can assign a scene to a pair of Macbeths or Lady Macbeths. For example, "Lady Macbeth, suspecting Macbeth's intention to harm Lady Macduff, approaches her husband to find out his intention." Have several pairs enact the same scene.

This allows for more lively discussion, challenges, and interpretations. Insights into human motivation develop quickly after students have walked in various characters' shoes for awhile. It is possible, then, for students to hypothesize about possible future events that characters might appear in, to forecast future behaviors, and to construct alternate circumstances. Drama activities thus promote higher levels of abstraction.

Readers Theatre

Readers theatre, a type of oral interpretation of literature, is similar to role playing but is slightly different in purpose and performance.[3] The first major difference is that it *is* scripted. The second difference is that although acting and oral interpretation have elements in common, acting requires that the performer *become* the character he or she is portraying. Oral interpretation, on the other hand, requires that the performer *suggest* the character or characters. The fictitious people and setting exist only in the imagination of the reader and the audience. Interpretative readers must therefore employ their imagination to accomplish this feat. They must feel the characters' emotions so completely that their voices and bodies create mental images for the audience.

Some procedures can assist in developing this inferential thinking. Students should become totally familiar with the text, studying both the connotation and denotation of the words. They must also ask themselves questions: Who is this character? What might he eat for breakfast? How did he get along with his father and mother? What time of day is it? What is the setting? What is the author trying to say? Short informal writings on questions like these help to focus feelings.

The highest level of synthesis occurs when the student masters interpretation, because it demands combining all the parts within a work and presenting them as a unified whole. The reader becomes the intrinsic meaning through the vehicle of the performance.

Predicting Exercises

The four exercises in this section are designed to promote students' ability in such predicting–related skills as making inferences, hypothesizing,and forecasting.

3. For specific exercises and a more thorough explanation of how to develop readers theatre approaches, see *Beginning Readers Theatre: A Primer for Classroom Performance*, by Gerald L Ratliff. Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills; Annandale, VA: Speech Communication Association, 1981.

Predicting Exercise 1: Become–a–Character

Goal:

To experience a literary or historical event through interpretation of a character or historical personage. Through this experience, students learn to make inferences about motives, personalities, and events.

Approach:

Divide the class into four groups. The task of each group is to "become" a character. First the group members study the information available about the character. Next, they write a ten–minute narrative in the persona of the character. This narrative should pertain to a dramatic situation (for example, signing the Declaration of Independence or planning to murder another character), and can be a diary entry, a letter, or a monologue.

Following the writing, which should "set" the character, the group discusses the situation, maintaining their assigned role. This discussion is not role playing in the traditional sense of "acting out" a part. Rather, it is "thinking out" a part to create a metaphor. The traditional end–of–chapter questions can be answered with the students still in character. This approach heightens discussion and interest.

Sample: (To be used after Act I of *Julius Caesar.*) The characters are Caesar, Brutus, Cassius, and Casca. Each group rereads all of their character's parts aloud, noticing not only what the character says and does, but also what others say about and to him. This preparation should take about twenty minutes.

Next, each group is given a writing assignment. The time limit is ten minutes, and the goal is to write two pages. The assignments are the following:

You are Caesar:	Talk to Antony in private about your past successes, future plans, and concerns. (Write a monologue, not a conversation.)
You are Brutus:	Write a letter to Claudius, a Roman friend who is visiting in Spain, about your concerns for Rome.
You are Cassius:	You are in a meeting with some key conspirators. Give a speech about your plans to take care of the "Caesar situation."
You are Casca:	You have gone to Paulus, a senator, after leaving Cassius the night before the Ides of March to convince him to join the conspirators. In a monologue, tell him all the reasons you can think of that he should become a part of the plot.

Students devote the next part of the class period to assuming the roles they created when discussing Act I. They sit in a large circle with all the Caesars in one section, the Brutuses in another, and so forth for the other characters. Beginning with Caesar, each student reads or tells his thoughts. At this point, those who are Brutus or another character may ask Caesar questions. More than one answer may be given to a particular question, depending on the character's viewpoint. For instance, when Brutus asks Caesar if he plans to accept the crown and become emperor, one of the Caesars may deny this ambition, while another may be eager to rule. Eventually, it becomes clear that Caesar is a multi-faceted personality. Other characters are similarly interviewed and allowed to reveal their thoughts.

It is important when structuring this type of exercise to complete the cycle in one class period, because a mood and momentum develop, and it is hard to recapture them on a second day.

Advantages:

Students learn to make connections between character motivation and personality. They also gain a greater understanding of the author's skill, and they experience inferential thinking.

Variation:

"Become-an-Author": Have students assume the persona of the author of a book they have read. A single "author" or a panel of "authors" can then be interviewed by "experts" in the field of literature in a mock TV show. Questions can range from "What influenced you to select the setting of your book?" to "Did anything from your life cause you to write this book?"

Predicting Exercise 2: Character Quiz

Goals:

To create a situation that promotes inferential thinking and to foster hypotheses about existing or future problems.

Approach:

Using the techniques of "Become-a-Character," divide students into several "character" groups and one "author" group. Depending on the subject matter, the author group is to assume the persona of either the author or an outside observer. If you are studying World War I, for example, the characters could be Georges Clemenceau, Woodrow Wilson, and Lloyd George. The outside observer could be Harry Truman or a reporter from the

London *Times*. Again, students are to write for ten minutes in their assumed roles. The author or outsider writes about how he or she sees the characters and/or the situations. Then, the various participants think of questions they would like to ask other characters, the author, or the outside observer.

Set up the classroom with the author/observer group in the front of the room. Have the rest of the characters sit in a semicircle so that they can see and interact with each other. Alternate the groups and individuals with questions and answers. Students must observe two main rules: (1) All answers must be given in character. (2) All participants must speak.

Advantages:

By responding in an unaccustomed persona, students will extend their ability to decenter their thinking and thus extend their ability to abstract.

Variations:

1. Have each group write a quiz for another group. Proceed as in "Pairing Partners for Quiz Taking/Making" (Reasoning Exercise 3).
2. Have the outside observer be a biographer collecting information for a new book. Each member of the observer group can then be a person from the character group.

Predicting Exercise 3: Character Conversations

Goal:

To stimulate the ability to forecast what kinds of motives or actions a set of circumstances will produce.

Approach:

Using the steps in "Become–a–Character," establish four or five character groups. Then create a problem for two or more of the characters to solve. For example, "Lady Macbeth, suspecting that Macbeth means to harm Banquo, detains Banquo at the castle. Macbeth enters. What happens?" Begin the problem solving by choosing an individual "Banquo" and "Lady Macbeth" to role–play the scene. Change the person playing Banquo at mid–scene or at a convenient point. This switch allows for a new interpretation. The scene can be played again with different individuals and a different outcome.

Next, present another problem involving the same characters. For example: "The banquet scene: The ghost of Banquo can speak. He is seen by Lady Macbeth as well as Macbeth. What happens?" (Students can also think up "What if . . ." situations.)

Advantages:

Students will increase their ability to extend interpretation. When more than one person is involved in a role, empathy for that role increases, as does the variation in interpretation.

Variation:

Give one group the job of creating situations and "directing" the characters.

Predicting Exercise 4: Readers Theatre

Goal:

To translate meaning from one form into another. This involves the skills of inferring, hypothesizing, and forecasting. Students must visualize concepts and communicate the meaning of those concepts to an audience. In this activity, both the process and the product are important.

Approach:

Divide the students into groups of four or five. Assign them short works of prose, poetry, drama, or historical incidents involving personalities. Students may then change the texts into original scripts or select segments for dramatic readings. The time limit for performance should be about fifteen minutes. All of the previous exercises are helpful in preparing students for this drama–like activity.

"Readers Theatre" has no set rules. Students may wear costumes, but the action is continuous; therefore, they should suggest characters rather than "become" them. Sometimes, a scarf or a hat may be enough to suggest a character. Props can be used, but they are not necessary. Readers may sit, stand, or lie. They can move about or remain stationary. Music, lighting effects, backdrops, and scenery are all possibilities. Narrators, in character, can be used to explain the purpose or to eclipse the time frame. Practical suggestions for Readers Theatre are in the booklet *Beginning Readers Theatre: A Primer for Classroom Performance* by Gerald Lee Ratliff (Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills; Annandale, VA: Speech Communication Association, 1981).

A variety of novels, plays, short stories, and poetry can be presented to a class vividly and with meaning when the teacher wants to survey a genre or period. In social studies, science, or math classes, students could research famous personalities or events and present them to the class with biographical sketches, scenes, and portions of documents. The result is a "collage" effect which makes the subject matter more striking and palatable.

Advantages:

Students share meaning and interpretaion, and the discussion of techniques encourages thinking about interpretations. For example, the choice of whether to wear costumes or use musical background forces students to consider the meaning of the text.

Variation:

Students can write original monologues, poetry, or scripts about a literary work or historical event and present as above.

Projecting

Learning to project is more difficult than learning to predict. Projecting requires implicit analysis and synthesis, paralleling Bloom's (1956) hierarchy of cognitive levels. Both Bloom's classification and that of Joan Tough (1977) are limited, however, if we are to assume that mere recognition of parts and their relationship to a whole is the most challenging type of thought. Even projecting ideas into new circumstances does not encompass the truly highest level of abstraction, synectic thinking. This highest level of thinking is more subtle, harder to define, and correspondingly more difficult to teach. Yet, it seems possible to create a climate that allows this kind of thought to happen in a classroom. Intuition, poetry, and language play are all relevant to the creation of such a climate.

Intuition and Poetry

Synectic thinking is a level of abstraction beyond synthesis. The "added ingredients" are intuition, feeling, and metaphor. Formally speaking, synectics involves "the joining together of different and apparently irrelevant elements," whereas synectics theory is "an operational theory for the conscious use of the preconscious psychological mechanisms present in . . . creative activity" (Gordon 1961, p. 3). In a less formal sense, however, synectics is a process we employ in relating to experience and in making meaning for ourselves — if only on a subconscious level.

Each individual creates in his or her own way, through a perception of events, a uniquely personal world. The whole of that personal world is created imaginatively, capitalizing on reconciliation of seemingly dissimilar elements. As human beings, we must move past logic to solve the great conflicts of our existence. James Britton notes some of these "basic irreconcilables": "the need to conform at war with the desire to rebel; the need to be adventurous at war with the need for security; . . . the need to love at odds with the law of the jungle . . ." (1982a, p. 28). Such conflicts require

supralogical reconciliation and explain the need for art, literature, and music.

Poetry, as an example of metaphorical thinking, is ideally suited to achieve a resolution of opposites. Born of tension within the artist, it expresses conflicting and contrasting forces with words, emotion, and rhythm. When poetry achieves a unity, we say it works well.

Britton refers to the "many–sidedness" of life situations, and especially to a "two–sidedness" or "polarity," with which poetry can deal more effectively than prose (1982a, p. 28):

> The language of poetry, it seems to me, differs most from the language of prose statement in the power it possesses to represent, indeed to recreate, this two–sidedness. It does so in many ways — by its ambiguous use of words and syntax, by using rhythm and the corporeal qualities of words to give a sense that may be at variance with the paraphrasable meaning; by using images which may themselves bring contrary impulses into play.

The poem creates a response in the reader by tapping the common intuitional bond that exists among all human beings. Emotion is the psychological reality which dictates our responses to facts. The force of emotion is the power that helps us "see" truth as accurately as the electron microscope enables biologists to study cells. It is feeling that penetrates experience and allows us to travel the involuted path to understanding. The poet uses all the resources of words to achieve this kind of insight. True critical thinking must employ similar mind–search techniques to uncover hidden meanings about our universe.

Those mysteries can sometimes be discovered through metaphors. Metaphoric thinking is a mental exercise that can have unexpectedly creative results. Contrary to Aristotle's premise that thinking in metaphors cannot be learned, Peter Elbow (1981) presents many examples of questions that can stimulate strange juxtapositions of ideas. The mind is a storehouse of impressions, and if it is stimulated, oddly correct insights may occur.

To teachers of math and science, a "poetic" type of response in learning may seem unrelated to a technical curriculum. To understand the connection, it is necessary to recognize that we learn only from the *interpretation* of experience. Mathematicians who can play with symbols, create analogies, derive theorems, and experiment with permutations are the ones who will solve the world's great riddles. We need engineers and scientists who can employ intuitive thought and play with ideas.

Language Play

The projecting exercises which follow are designed to assist metaphoric response and to contribute to the expressive use of language. They consist primarily of language play. While the word "play" connotes frivolity, the antithesis of most people's view of critical thinking, the opposite is true. Play, fantasizing, and creativity are high levels of abstraction. As envisioned by Donald Winnicott in his book *Playing and Reality* (1971), play is an area of free activity lying between the inner personal reality and the outer environment. This "third area" is essential for the creative life to expand. It is part of all artistic creation. Play allows us to suspend reality and our own concerns temporarily in order to experiment with new juxtapositions and combinations.

James Britton suggests that "the arts (including literature) represent a highly organized activity within the general area of 'play' " (1982b, p. 42). This "art-like" organization functions in a different way from cognitive organization. *How* this is so is not clear, nor is *why*. What *is* known is that the need for this activity exists. Higher mathematics and science are artistic endeavors, as are sociological and philosophical thought. The more abstract the realm, the more blurred the delineation between the cognitive and the creative. Teachers should thus strive to create a space in which the "third area" can live.

Projecting Exercises

The four exercises in this section promote the development of skill in projecting by involving students in such aspects of projecting as intuition, projecting into the feelings of others, manipulating ideas, and penetrating the meaning of words and ideas.

Projecting Exercise 1: How a Poem Acts

Goal:

To project the feelings and experiences a poem evokes through a dramatic performance. To achieve this, students must intuit the connotations of words.

Approach:

Select poems that have some movement, sounds, or emotions. Good poems for this exercise are "At Grass," by Philip Larkin; "The Thought-Fox," by Ted Hughes; "The Animals' Arrival," by Elizabeth Jennings; and "Refugee Blues," by W. H. Auden.

Divide the class into groups of four or five students. Give a different poem to each group, with enough copies so that every members will have one. Each group is to plan a dramatic presentation of the poem with each member taking an active part. There are no rules about how the presentation should be performed. To prepare for their presentation, each group should complete the following in fifteen minutes:

1. Read the poem aloud once or twice.
2. Listen to the sounds as well as for the meaning.
3. Think about sound effects that would enhance a presentation of the poem — wind blowing, a clock ticking, the ocean's roar, etc.
4. Think what kinds of voices should read different parts.
5. Decide which parts can be read solo and which can be read in chorus.
6. Decide how group members will sit, stand, or lie in the presentation.
7. Think of gestures or other movements that will dramatize the poem's effect.
8. Practice the poem once or twice.
9. Return to the large group to perform.

After their presentation, ask students to respond to two questions:

1. What was most useful to you in preparing your dramatic performance?
2. What, if anything, hindered your performance?

Each group's understanding of their poem's meaning is conveyed implicitly through their presentation. Discussion can follow, with groups asking each other o' about the interpretations. It is helpful to have repeat performances i discussion.

Advantage:

Listening to rhythm and "feeling" poetry enhances understanding for both performers and listeners.

Variations:

1. Several poems by one author can be presented to show similarities or contrasts in style.
2. Original poetry can be performed.

Projecting Exercise 2: What a Poem Says

Goal:

To freely associate words and meanings in a poem, building intuitive responses to words and images.

Approach:

This activity should follow "How a Poem Acts." Suggested poems include "The Send–Off," by Wilfred Owen; "Embassy," by W. H. Auden; "Evans," by R. S. Thomas; and "A Refusal to Mourn the Death, by Fire, of a Child in London," by Dylan Thomas.

Divide the class into groups of four or five. Give each group copies of a different poem. The task is to discover what the poem is saying and how. Allow ten minutes for group discussion. Emphasize that there are no "correct" answers; the students will simply be readers responding to language. The group members should use the following format for discussion:

1. Read the poem aloud once or twice with different readers taking different parts.
2. Discuss the following questions. (Group members may write individual answers first, then share with the group.)
   A. What kinds of sounds do you hear?
   B. How would you stage this poem?
   C. What memories or experiences of your own are brought to mind?
   D. Are there any parts you don't understand? What would help to clarify these parts?
   E. Who is the speaker of the poem?
   F. What images are most vivid or meaningful to you?

After discussion, the small groups are to return to the large group and read their poems aloud. After reading their poem, each group should explain it to the class with their subjective interpretations. Again, this is open–ended discussion with no "right answer" tag line.

Advantages:

This exercise is a more cognitive approach to poetry than "How a Poem Acts." It provides another way to "get into" a poem, and it increases students' ability to create new meanings.

Variation:

"Create–a–Project": Groups can devise a project for another group to carry out for the poem, for example, creating a game, a movie script, a play, a

painting, or a tableau. The groups can then discuss and practice their assigned projects, return to class, and give a presentation.

Projecting Exercise 3: Own–a–Word

Goals:

To foster an awareness of the connotations of words as well as their denotations. This exercise stimulates metaphoric thinking. "Own–a–Word" helps students to manipulate ideas; therefore, it is particularly useful for learning science and math terms.

Approach:

Give each student a word to "own." The student's task is to present the word to the class in a unique, distinctly individual way. In the student's hands, the word may become a poster, an acrostic poem, a story, a pet that needs special treatment, or a weapon. Part of the assignment is to produce a *visual image* of the word. These images can be gathered in a booklet or posted on a bulletin board.

Individual presentations of words are to be done orally. Each student shares his or her word with the class, explaining what he or she did and why. Years later students will still remember "their" words. For example, one sophomore wrote this acrostic for *pacifist*:

Peace–loving
Afraid
Civilian
Immune to hate
Friendly to everyone
Interested in a perfect world
Spiteful of war
Too trustful

Advantages:

Playing with words helps to make them the student's own. Students are also able to see the unique possibilities a word contains.

Variation:

"Sell–a–Word": Have students compose short persuasive speeches about why others should buy their word. They should explain the word's special uses, features, values, and why their particular word is needed by the general

public. This assignment can be videotaped as a TV commercial, or audiotaped as a radio commercial.

Projecting Exercise 4: Metaphoric Questions

Goals:

To stimulate metaphoric thinking, which is one of the highest levels of abstraction. This exercise also encourages the manipulation of ideas. By placing ideas into different contexts, students can test the ideas' validity.

Approach:

After the class has completed a unit of work, divide them into groups of four or five. Provide each group with several metaphoric questions. In fifteen minutes they are to generate as many responses as possible. The advantage of working with metaphoric questions is that they challenge the mind to clarify issues and main points of contention. In addition, they bring into focus previously unperceived relationships. Metaphors can be used to unify concepts or to introduce essay or speech topics. Group evolvement of ideas can lead to students making similar intuitive leaps on their own after practice.

The following are samples of metaphoric questions. Insert whatever topic is being studied in the blanks.

1. Describe _____ as a product advertised on TV. What company would sell it? What actor would promote it? What age group would buy it? What show would the company selling it sponsor?
2. Describe _____ as a TV show. Who would star in it? Would the reruns be popular? What time of day would it air? What are the chances of the program being serialized or imitated by others?
3. Describe _____ as a place. Who would visit it? Would it be written up in travel brochures? What kind of wardrobe would a traveler need there? Would it have many inhabitants? What kind of government, economy, and language would the place have?
4. Describe _____ as an animal. What would its habitat be? What would its natural enemies be? What would its diet be? Would the animal live better in captivity or in the wild?
5. Describe _____ as a musical piece. What style of music would it be? Who would perform it? Would performances of it be popular? Who would promote it? How would records of it sell?
6. Describe _____ as an object. Where would it be kept? Who would own it? What would its history be? How might it be preserved or destroyed?

7. Describe _____ as a disease. How would it be contracted? What medicine would cure it? Who would be most likely to suffer from it? What would the chances of recovery be? What kind of specialist would treat it?
8. Describe _____ as a prepared item of food. What would the main ingredients be? What types of utensils would be needed to prepare it? How long would it take to cook? What type of restaurant would serve it? When would the dish be most appropriately served?

After discussing these questions, the groups are to return to the main group and share their metaphors. A recorder writes down the most significant ideas for everyone. The generated list is then handed out as a thought-trigger for writing. Students can write journal responses, write essays, or give brief talks expanding on the images, depending on the needs of the lesson. In fact, following up most of the activities in this booklet with a writing assignment will place the concepts into the students' long-term memory bank more effectively.

Advantages:

This activity can promote synectic thinking — creatively combining disparate realities into new, meaningful wholes. Unexpected results often occur, and the best writing — both poetry and prose — can result.

Variations:

1. Give one metaphoric question to each group. Direct them to expand on their ideas for fifteen minutes, then share their responses with the class.
2. Have each student write one metaphoric question. Then group the students by questions to share their ideas. After discussion, they can present their responses to the class.

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