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# 1

## Introduction

### The Design of the Book

**T**his handbook has one basic objective: to demonstrate that it is possible and practical to integrate instruction for critical thinking into the teaching of all subjects. We focus on language arts, social studies, and science, but we believe that the range of sample *before* and *after* lessons we provide will prove to any open-minded person that teaching so as to cultivate the critical thinking of students is eminently *practical*. We also believe that it should be given the highest priority, for it is *necessary* if we genuinely want to prepare our students for the real world which awaits them personally, politically, and vocationally.

Of course, to say that it is practical is not to say that it is simple and easy. To teach for critical thinking requires that teachers themselves think critically, and very often teachers have not been encouraged to do so. Furthermore, sometimes they do not feel competent to do so. Every teacher interested in fostering critical thinking must be prepared to undergo an evolutionary process over an extended period of time. Mistakes will be made along the way. Many didactic teaching habits have to be broken down, to be replaced by ones more like coaching than lecturing. In any case, there are many dimensions of critical thinking, and one needs to be patient to come to terms with them. Of course, since critical thinking is essential in the life of adults as well as children, teachers will find many uses for their emerging critical thinking abilities in their everyday life outside the classroom: as a consumer, citizen, lover, and person.

We have divided this handbook into two parts: "Putting Critical Thinking into Instruction," and "Achieving the Deeper Understandings." We have put a good deal of the theory of critical thinking instruction into "Part Two" because most teachers like to get a good look at application before they spend much time on theory. In a way this makes good sense. Why learn a theory if you're not happy with what the theory makes possible? On the other hand, it is sometimes hard to understand and appreciate the application if one is not clear about the theory that underlies it.

*How* and *why* are often deeply intertwined. We hope therefore that the reader will move back and forth between parts one and two, as needed. It would probably be a good idea to thumb through the book as a whole, familiarizing yourself with what's there, so that when you run into a problem you will be apt to remember sections of the book that are likely to shed light upon it. For example, notice that the glossary of critical thinking terms may be of use if you run across a term in critical thinking whose use and importance is not perfectly clear to you. In fact, reading randomly in the glossary is a good way to stimulate your sense of what critical thinking is.

Each of the chapters makes the transition from a didactic paradigm of education to a critical one a little easier. This chapter provides an introduction to critical thinking and its importance for education, an introduction to lesson remodelling, and some suggestions for using this book. Chapter 2, "Global Strategies", begins to delve more deeply into what education for critical thought requires of teachers. Chapter 3 describes the thirty-five remodelling strategies, explains their importance, and suggests how to teach for them. The rest of "Part One" consists primarily of remodelled lessons. The three main subject areas are introduced with chapters describing the relationship between the subject and critical thought, and some frequently encountered flaws in textbook approaches. The last chapter focuses on remodelling lessons into thematic units.

"Part II: Achieving the Deeper Understandings", opens with a comparison of didactic and critical views on education. Its purpose is to help teachers grasp the educational big picture, and distinguish what education is from what it is not. It includes a description of common features of texts that impede critical thought. Chapter 9 outlines the changes in curriculum required by a shift toward education for critical thought. Chapter 10 and 11 provide practical ideas for facilitating staff development in critical thinking. Chapter 12, "What Critical Thinking Means to Me", consists of short writings on critical thinking by Greensboro teachers after a workshop on critical thinking. In chapter 13 we consider the problem of defining critical thinking, and examine several definitions. Chapter 14 is an analytic glossary of words and phrases key to critical thinking and education.

## **Why Critical Thinking Is Essential to Education**

If we consider some of the many complaints of classroom teachers concerning their pupils and then contrast them with what we look for in the ideal student, we will recognize that the fundamental missing element in schooling today is *thinking students* or, more precisely, *critically thinking students*.

Here are some of the many complaints we hear from teachers:

- ✓ "Most students aren't motivated; they don't want to study or work. They look for chances to goof off, clown around, or disrupt class. They'd rather talk about music, clothes, cars, ...."
- ✓ "Students forget what they've learned. We have to keep going over the same points, reminding them of what they've learned, rather than building on past learning. Each class begins at square one."
- ✓ "Most students are obsessed with grades and don't care about learning."
- ✓ "They're impatient. They want clear simple answers and they want them fast."
- ✓ "They make the same mistakes over and over again. They don't learn to correct their own mistakes."
- ✓ "They don't use what they've learned."
- ✓ "They need to be told every little thing. They don't even try to figure things out. They want us to do all of their thinking for them."

- ✓ "When I ask if there are questions, they don't have any; but they haven't understood the lesson."
- ✓ "When assigned position papers, many students just write facts. The rest simply state and repeat their feelings."
- ✓ "They hate to read. (It's boring.)"
- ✓ "They hate to write. (It's too hard.)"
- ✓ "Instead of explaining or developing their ideas, they just repeat themselves."
- ✓ "They can't seem to stay on topic for long without going off on tangents."

The kind of students teachers would like to have are equally easy to describe:

- ✓ Students who are motivated to learn, get excited by ideas, don't need to be reprimanded, and pay attention by choice.
- ✓ Students who remember what they learned yesterday, last month, last year; who don't have to be reminded over and over again what was covered before.
- ✓ Students who see grades as a by-product of learning; who put learning on a par with grades.
- ✓ Students who recognize that they can't completely understand everything at once, who are willing to delve; who are dissatisfied with pat answers.
- ✓ Students who learn from their mistakes, correct themselves.
- ✓ Students who *use* what they've learned.
- ✓ Students who can and will try to figure things out for themselves and don't expect me to do all of the thinking.
- ✓ Students who recognize when they don't understand something and can ask questions for clarification.
- ✓ Students who can get beyond the facts and the surface to explore deeper meaning; students who respond thoughtfully and go beyond knee-jerk reactions and first impressions.
- ✓ Students who like to read and talk about what they've read.
- ✓ Students who recognize the need to write in order to develop their ideas.
- ✓ Students who know the difference between explaining themselves and repeating themselves.
- ✓ Students who can and do stick to the point.

If we look closely at how teaching is typically structured, we will see that at the root of it are conceptions of knowledge, learning, and teaching that unwittingly take the motivation to *think* away from students. In most classes most of the time, teachers are talking and actively engaged, while students are listening passively. Most teachers' utterances are statements, not questions. When teachers ask questions, they typically wait only a couple of seconds before they answer their own questions. Knowledge is taken to be equivalent to recall, so that when students can repeat what the teacher or text said, they are thought to have knowledge. An attempt is continually made to reduce the complex to the simple, giving students formulas, procedures, short cuts, and algorithms to memorize and practice in hopes that understanding will emerge at the same time.

Schoenfeld reports on an experiment in which elementary students were asked questions like this: "There are 26 sheep and 10 goats on a ship. How old is the captain?" 76 of the 97 students "solved" the problem by adding, subtracting, multiplying or dividing. (Schoenfeld, 1989.) They felt they were expected to do so as quickly and "correctly" as possible. They did *not* feel they were expected to *make sense* of the problem. Instruction and practice had not emphasized *understanding* the problem.

Schoenfeld cites many similar cases, including a study that demonstrated that students tend to approach "word problems" in math by using the key word algorithm, that is, when



reading problems like, "John had eight apples. He gave three to Mary. How many does John have left?", they look for the words like 'left' to tell them what operation to perform. As Schoenfeld puts it, "... the situation was so extreme that many students chose to subtract in a problem that began 'Mr. Left ...'." (Schoenfeld, 1982.) Giving students such short cuts as indicator words, though it seems to make learning easier, actually interferes with learning in a deeper sense. Students are, in effect, taught that problems can be solved by circling data and going through steps practiced before ("I'm supposed to do this, then this, then this."); that they shouldn't slow down and think things through. They have had much more practice going through the steps than they have at thinking things through.

This tendency toward robotic, mindless responses becomes obsessive in many students. Hence, in their minds, history class becomes a place where they hear names, dates, events, and judgments about them, and then try to repeat what they have heard on tests. Literature becomes uninteresting stories to remember along with what the teacher said is important about them, such as foreshadowing.

Consider how students are generally taught factual detail. Students are continually presented with easily retainable facts (for example, foreign countries' main exports), and merely expected to reiterate them. They do not clearly understand *why* they should remember these facts. These collections of facts become merely sets of words in their heads, with no meaning, significance, or use. They *can* have meaning to students, can become *intelligible* to students, when they tell students something important, something students need to know. If students are trying to understand a country's economic problems, it may become important to know its chief exports. In such a context, that fact isn't just sitting there in the student's head as a bunch of words, it has meaning. It has a place in a broader picture; it has consequences; it helps that student understand that country's problem. It is *context*, not the mere fact itself, that gives it meaning, that makes it intelligible.

Values and principles tend to be treated as though they were facts. They are stated, and students are expected to reiterate them. This sort of process does not produce *understanding*. Principles (such as, "Write clearly!" and, "Stick to the point!") have their meaning and their justification in their application, in their *use*. I may know that I'm supposed to stick to the point, but this principle is little more than words to me if I don't know *how* to stick to the point, if I don't learn how to recognize *for myself* when I'm focused and when I stray. I can only learn how by practice, by *thinking* — by trying, sometimes succeeding, sometimes failing, by seeing for myself when I succeeded, when I failed, and by *understanding* the differences between the successes and failures.

A critical model of education reverses these patterns at every point. Students are continually asked to think about what they learn, to try to apply their new ideas, to compare their own ideas with those in their textbooks, to actively discuss what they are learning in small groups.

The underlying assumption in present education is that knowledge consists of bits of information, concepts, and skills which students can learn through lecture and rote memorization. Educators assume that students automatically replace ignorance with knowledge, misconception with truth. This assumption is unjustified.

One main consequence of this idea is that being told something, however clear the explanation, does not guarantee understanding. If you tell me something that contradicts or is incompatible with my present system of beliefs, I'm unlikely to replace my whole belief system with that new idea. I will often distort what you've said so that it fits my belief system. I may simply "tack it on" to my beliefs, ignoring the incompatibility between old and new, bouncing back and

forth between them, sometimes using one, sometimes the other, willy-nilly; or I may simply fail to take it in at all. To really learn the new idea, I have to struggle through the problems the idea creates for me, *build* a new mental structure or system of beliefs. This process requires me to make my present beliefs explicit (figure out what I really think), and slowly reshape the old system into a new body of thought. Hence, to understand the new idea, concept, or principle, I have to think my way through to it, internalize it. One way to achieve this is through extended discussion, talking and listening to others as they internalize new knowledge. Consider how this conception of learning works.

When I state my thoughts aloud, I think again about what I'm saying, realize, perhaps, that my thinking is not clear. I may think of a new example; I may put the point in a slightly better way, or different way, and thus come to see new sense in it. When I have to convince others (such as classmates), I have to try to give convincing reasons for thinking as I do. The people I'm talking to respond: they understand some parts of what I've said better than others, forcing me to rephrase my point and so think it through again in a slightly different way, with the result that I understand it more clearly. My audience says things in response that had never occurred to me; they ask questions, raise objections, and so on. As I answer, I find myself saying things I hadn't realized I believed. Sometimes I say things I know are wrong, and so I have to change my original idea somewhat. My audience may suggest new examples, or expand on my ideas in a new way. In short, while I'm discussing things with my classmates *I am learning*. By listening to me, reacting, and hearing my replies, my classmates are learning. We're all thinking things through together. As a group, we know more, can figure out more, and have more and better ideas than any one of us has individually. Having done our own thinking and developed our own views, we understand more deeply; what we learn becomes part of us rather than mere words which we will soon forget.

This is at the heart of education for critical thought. Students learn to think by practicing thinking, learn to learn by practicing learning, learn to judge by practicing judging and by assessing those judgments. In this way, students come to use more of the full power of their minds.

When teachers begin to integrate critical thinking into their instructional practice, they have experiences like the following (taken from *The Greensboro Plan: Infusing Reasoning and Writing into the K-12 Curriculum*):

**Beth:**

I teach North Carolina History and 8<sup>th</sup> grade English, and I am always trying to bridge the gap and use an interdisciplinary approach. What critical thinking helps me do is go beyond the textbook and find things we can really discuss using the Socratic method — to go beyond just the facts and try to analyze the situation — to put ourselves in the other person's shoes — to look at a lot of different components.

Here is an article on slavery which I have copied and brought with me to show how you do not have to rewrite all your lesson plans to infuse critical thinking into your curriculum. Instead, you go further and bring in other things to enhance what you're teaching and give opportunities for discussion. This article is about slavery and slave trading. I have the students become one of the slaves on the ship and write a diary about how it would feel to be a slave. Later on in English, students write an essay on whether or not the ship captains should have been tried as criminals. This asks students to look at ideas from different viewpoints. For a final activity, I asked students to assume that they were a member of the English Parliament of 1807 and to write a persuasive essay on whether or not slavery should be banned and why.

**Mandy:**

Since I have taken part in this project, I have become a much more critical thinker. That's helped me tremendously in my classroom.



I always explain to my students how all our subjects are overlapping; this helps them in real life. One revised science lesson we used this year was building a rain forest in our room in a terrarium. We turned it into a vivarium by adding an anole, a small lizard.

The students decided they wanted to write a book about the anole, and the first thing they wanted to do was go to the library to copy information. Instead of this, we brainstormed to find out what we already knew and what we could learn just by observation. All my students became motivators for others while we worked with words.

After the pre-writing exercises, I took them to the media center for research. Again, they wanted to fall into the trap of copying from the encyclopedia. But I allowed them only to write down words — single words or maybe a phrase, rather than copying down sentences. It was difficult for them — it was difficult for me too.

They came back from the media center with ideas rather than with things they had copied. We talked about the ideas and categorized — and then I told them to write down ideas in their own words. It was amazing what happened! If I had given this assignment a year ago, a description of the anole would be only a few sentences long. My students this year wrote pages — they really did — and they were excited. This was their work; this was their description; it was not *World Book's* description. And it made it much more real to them — and of course more real to me, too.

In the first example, notice how students had to grapple again and again with the concept of slavery from different angles: What was it like? In what ways were different people partly responsible? What do I think of it? How can I convince others to agree with me? Each time students explored the issue, they were learning and using facts, probing and clarifying values, using principles, and each time they were putting these pieces together.

The second example above illustrates the difference between passive recall and active thought. Students first publicly shared their original beliefs, ideas, and suggestions. Then, when they consulted resources, they wrote only the barest bones of the information, and were thus forced to reconstruct the new knowledge. Furthermore, though this process was more difficult, the students wrote more and were more pleased with the results.

Finally, consider two more experiences of teaching students to learn deeply.

#### **Sylvia**

My involvement in the Reasoning and Writing project came about because I believe the following: 1) students are faced with an explosion of information; 2) given a limited time in which to learn, students must choose *what* information they need and learn *how* to acquire it; 3) to make intelligent choices, students must exercise good judgment; 4) successful living in today's world requires high order thinking and reasoning skills; 5) writing can be used as a tool to improve thinking and reasoning skills in all curriculum areas ....

I have incorporated two new ideas this year: Socratic questioning and writing to aid concept development. I have worked primarily with one class, using questioning techniques to encourage students to think critically. The results have been encouraging: class discussions became more animated, students offered ideas freely, criticism was constructive, helpful, and resulted in better ideas. I believe that the entire class benefitted.

One high school teacher tried to focus on critical thinking in a sophomore English class. This teacher designed small group and paired discussions only to have the students complain, "You're supposed to use the grammar book. You're supposed to start on the first page and give us the sentences to do and then check them and then we do the next sentence ...."

The students insisted that "doing the sentences" was the top priority. One of the students said, in defense of this method, "We learned about prepositions." However, when the instructor asked the class *what* they had learned about prepositions, the class went silent. When asked, "Do you remember what prepositions are? Can you name some?" nobody could. Though this teacher continued her emphasis on critical thinking, she also gave students "sentences to do" for part of the

class time. After the fourth day, no students objected when she neglected to assign more sentences. On their final exam, these students were asked, "Why is it better for a school to teach you how to find answers than to teach you the answers?" Among their responses were the following:

- ✓ So you can get in the habit of doing it yourself and not depend on someone else.
- ✓ When you teach people the answer, they will never try to find the answer themselves. They will look for somebody to give them the answer instead of looking for it because they don't know how to find it.
- ✓ When you get a job, they will expect you to find the answers yourself.
- ✓ Because it makes you feel good about yourself when you can look up something by yourself and get the answer correct. You feel more independent in school.
- ✓ School is not going to be with you all your life.
- ✓ So you can learn how to find the answers to *your* problems because one day you're going to have to find the answers yourself. Nobody is going to be able to give you the answers.
- ✓ Because it won't help you to know the answers and not know what they mean.
- ✓ Because in the future there won't be a teacher to hold your hand or to tell you everything you should know. You should learn on your own.

As you consider the rest of the material in this book, we ask you to apply these basic ideas to each facet of the task of incorporating critical thought into instructional practice. Just as students must struggle through a process of restructuring their thought to incorporate new facts, skills, and principles, so must teachers grapple with the problems of restructuring their conceptions of education and learn to apply the principles underlying it. We encourage you to work your way through our ideas — reading, explaining, listening, questioning, writing, applying, assessing — figuring out what you think about what we say.

## Our Concept of Critical Thinking

Our basic concept of critical thinking is, at root, simple. We could define it as the art of taking charge of your own mind. Its value is also at root simple: if we can take charge of our own minds, we can take charge of our lives; we can improve them, bringing them under our self command and direction. Of course, this requires that we learn self-discipline and the art of self-examination. This involves becoming interested in how our minds work, how we can monitor, fine tune, and modify their operations for the better. It involves getting into the habit of reflectively examining our impulsive and accustomed ways of thinking and acting in every dimension of our lives.

All that we do, we do on the basis of some motivations or reasons. But we rarely examine our motivations to see if they make sense. We rarely scrutinize our reasons critically to see if they are rationally justified. As consumers we sometimes buy things impulsively and uncritically, without stopping to determine whether we really need what we are inclined to buy or whether we can afford it or whether it's good for our health or whether the price is competitive. As parents we often respond to our children impulsively and uncritically, without stopping to determine whether our actions are consistent with how we want to act as parents or whether we are contributing to their self esteem or whether we are discouraging them from thinking or from taking responsibility for their own behavior.

As citizens, too often we vote impulsively and uncritically, without taking the time to familiarize ourselves with the relevant issues and positions, without thinking about the long-run implications of what is being proposed, without paying attention to how politicians manipulate us by flattery or vague and empty promises. As friends, too often we become the victims of our own

infantile needs, "getting involved" with people who bring out the worst in us or who stimulate us to act in ways that we have been trying to change. As husbands or wives, too often we think only of our own desires and points of view, uncritically ignoring the needs and perspectives of our mates, assuming that what we want and what we think is clearly justified and true, and that when they disagree with us they are being unreasonable and unfair.

As patients, too often we allow ourselves to become passive and uncritical in our health care, not establishing good habits of eating and exercise, not questioning what our doctor says, not designing or following good plans for our own well-ness. As teachers, too often we allow ourselves to uncritically teach as we have been taught, giving assignments that students can mindlessly do, inadvertently discouraging their initiative and independence, missing opportunities to cultivate their self-discipline and thoughtfulness.

It is quite possible, and unfortunately quite "natural", to live an unexamined life, to live in a more or less automated, uncritical way. It is possible to live, in other words, without really taking charge of the persons we are becoming, without developing, or acting upon, the skills and insights we are capable of. However, if we allow ourselves to become unreflective persons, or rather, to the extent that we do, we are likely to do injury to ourselves and others, and to miss many opportunities to make our own lives, and the lives of others, fuller, happier, and more productive.

On this view, as you can see, critical thinking is an eminently practical goal and value. It is focused on an ancient Greek ideal of "living an examined life". It is based on the skills, the insights, and the values essential to that end. It is a way of going about living and learning that empowers us and our students in quite practical ways. When taken seriously, it can transform every dimension of school life: how we formulate and promulgate rules, how we relate to our students, how we encourage them to relate to each other, how we cultivate their reading, writing, speaking, and listening, what we model for them in and outside the classroom, and how we do each of these things.

Of course, we are likely to make critical thinking a basic value in school only insofar as we make it a basic value in our lives. Therefore, to become adept at teaching so as to foster critical thinking, we must become committed to thinking critically and reflectively about our own lives and the lives of those around us. We must become active, daily, practitioners of critical thought. We must regularly model for our students what it is to reflectively examine, critically assess, and effectively improve the way we live.

## **Introduction to Remodelling: Components of Remodels and Their Functions**

The basic idea behind lesson plan remodelling as a strategy for staff development in critical thinking is simple. Every practicing teacher works daily with lesson plans of one kind or another. To remodel lesson plans is to critique one or more lesson plans and formulate one or more new lesson plans based on that critical process. To help teachers generalize from specific remodelling moves, and so facilitate their grasp of strong sense critical thinking and how it can be taught, we have devised a list of teaching strategies. Each strategy highlights an aspect of critical thought. Each use of it illustrates how that aspect can be encouraged in students. In the chapter, "Strategies", we explain the thirty-five strategies illustrated in the remodels. Each strategy has two main parts: the "principle" and the "application". The principle links the strategy to the idea of strong sense critical thinking. In the application, we explain some ways the aspect of critical thought can be encouraged.

Complete remodelled lessons have three major components: an "Original Lesson", or statement of the "Standard Approach" (which describes the topic and how it is covered, including questions and activities); the "Critique" (which describes the significance of the topic and its value for the educated thinker, evaluates the original, and provides a general idea of how the lesson can be remodelled); and the "Remodelled Lesson" (which describes the new lesson, gives questions to be posed to students and student activities, and cites the critical thinking strategies by number). The strategy number generally follows the questions or activities it represents. When an entire remodel or section develops one dimension of critical thought in depth, the number appears at the top of the remodel or section. Complete remodel sets also include a list of "Objectives" which integrate the objectives of the original with the critical thinking goals; and the list of critical thinking "Strategies" applied in the remodel (listed in order of first appearance). Note the functions of these parts in the example below. Each component can serve some purpose for both the writer and the reader.

# Advertising

## Objectives of the remodelled lesson

The students will:

- practice listening critically by analyzing and evaluating T.V. commercials
- exercise fairmindedness by considering advertisements from a variety of perspectives
- analyze and evaluate the arguments given in ads
- practice using critical vocabulary to analyze and evaluate ads
- clarify key words
- distinguish relevant from irrelevant facts in ads
- examine assumptions in ads
- develop insight into egocentricity by exploring the ways in which ads appeal to unconscious desires

## Standard Approach

Very few texts actually address the issue of advertising. Those that do touch upon indicators to watch for which signal the use of some sort of reasoning — such indicators as "if ... then", "because", "since", "either ... or", and "therefore". Students are to decide if the reasoning presented is logical or illogical. Some lessons on ads focus on finding and decoding the factual information regarding sales. Students are often asked to write their own ads.

## Critique

We chose this lesson for its subject: advertising. Ads are a natural tie-in to critical thinking, since many are designed to persuade the audience that it needs or wants a product. Ads provide innumerable clear-cut examples of irrelevance, distortion, suppressed evidence, and vague uses of language. Analysis of ads can teach students critical thinking micro-skills and show their use in context. Practice in analyzing and evaluating ads can help students develop

the ability to listen critically. The standard approach, however, is not done in a way which best achieves these results.

Such lessons often focus more on writing ads than critiquing them. They tend to treat neutral and advertising language as basically equivalent in meaning, though different in effect, rather than pointing out how differences in effect arise from differences in meaning. They down-play the emptiness, irrelevance, repetition, questionable claims, and distortion of language in most ads. Their examples bear little resemblance to real ads. By rarely addressing ads aimed at students, texts minimize useful transfer.

Since most students are exposed to more television commercials than other ads, we recommend that students discuss real commercials aimed at them. We also provide suggestions for using ads to practice use of critical vocabulary and to discuss the visual and audio aspects of commercials.

### **Strategies used to remodel**

- S-22** listening critically: the art of silent dialogue
- S-9** developing confidence in reason
- S-14** clarifying and analyzing the meanings of words or phrases
- S-16** evaluating the credibility of sources of information
- S-3** exercising fairmindedness
- S-31** distinguishing relevant from irrelevant facts
- S-18** analyzing or evaluating arguments, interpretations, beliefs, or theories
- S-35** exploring implications and consequences
- S-30** examining or evaluating assumptions
- S-28** thinking precisely about thinking: using critical vocabulary
- S-2** developing insight into egocentricity or sociocentricity
- S-29** noting significant similarities and differences

### **Remodelled Lesson Plan s-22**

Due to the number of ads to which students are exposed, and their degree of influence, we recommend that the class spend as much time as possible on the subject. As students learn to approach ads thoughtfully and analytically and practice applying critical insight to their lives, they develop faith in their reasoning powers and their ability to see through attempts to irrationally manipulate them. **S-9**

To focus on ads and language, begin by having students give complete descriptions of what is said in a variety of television commercials. Put the quotes on the board. For each commercial, the class can evaluate the arguments presented in ads by discussing the following questions: What ideas does it give you about the product (or service) and owning or using it? Does it give reasons for buying the product? If so, what reasons? Are they good reasons? What are the key words? Do they have a clear meaning? What? **S-14** What other words could have been chosen? Who made this ad? Why? Do they have reason to distort evidence about the worth of the product? **S-16** How might someone who wasn't trying to sell the product describe it? How might a competitor describe it? **S-3** What would you need to know in order to make a wise decision about whether to buy it? Does the commercial address these points? **S-31** Why or why not? Has anyone here had experience with the product? What? **S-18**

The teacher interested in developing students' critical vocabulary can have students practice while critiquing ads. Use questions like the following: What does the ad *imply*? **S-35** Does the ad make, or lead the audience to make, any *assumptions*? Are the *assumptions* true, *questionable*, or false? **S-30** Does the ad contain an *argument*? If so, what is the *conclusion*? Is the *conclusion* stated or *implied*? Does the ad misuse any *concepts* or ideas? To judge the product, what facts are *relevant*? Are the *relevant* facts presented? **S-31** Does it make any *irrelevant* claims? **S-28**

When the commercials have been discussed, have students group them by the nature of the ads (repetition, positive but empty language, etc.) or by the appeals made (to the desires to have fun, be popular, seem older, etc.) Have students fill out the groups by naming similar commercials not previously discussed. Students could discuss why these appeals are made. "How do ads work? Why do they work? Do they work on you? On whom? Why? What are slogans for? Jingles? Why are running stories and continuing characters used? Why are the various techniques effective?" **S-2**

The class could also compare different ads for the same product, aimed at different audiences (e.g., fast food ads aimed at children, and at adults). "How do these two differ? Why? To whom is each addressed? Why are they different?" **S-29** The class could compare ads for different brands of the same or similar products; compare ads to what can be read on ingredients labels; or design and conduct blind taste tests. **S-18**

To gain further insight into listening critically, the class could also discuss aspects of the ads other than use of language. "What does the ad show? What effect is it designed to achieve? How? Why? What is the music like? Why is it used? Do the actors and announcers use their tone of voice to persuade? Facial expression? How? Are these things relevant to judging or understanding the product?" **S-22**

The teacher may also have the class critique ads for any stereotyping (e.g., sexual stereotyping). **S-2**

For further practice, if a VCR is available, watch and discuss taped commercials. Students could jot notes on critical points and share their insights.

The "Standard Approach" (or "Original Lesson") describes how the subject is treated. As a summary, it provides focus for the critique and remodel. Teachers who share their work can better follow the remodel when the original is clearly described. The critical thinking infused is better highlighted — for both the writer and the reader — when the original is available for contrast with the remodel.

The "Critique" generally begins by explaining the use of having students study the subject, the role such study has in the life of the critical thinker, and how critical thinking applies to the topic. It then provides a critique of the original from the point of view of education for critical thinking. Given the reasons for studying the topic, and the role such study should have for the critical thinker, the ways the original fosters and fails to foster such understanding is explicated.



Thus, the analysis of the significance of the topic provides a focus for and basis of the evaluation. The evaluation, then, mentions parts of the original that can be kept, and parts that should be changed or dropped, and *why*. The critique often includes a general statement suggesting what must be added to raise deeper issues and develop insight into the material. In short, the critique *justifies* the changes made to produce the remodel.

The "Remodelled Lesson" then follows, based on the analysis and evaluation of the topic and its treatment in the original. It reflects the reasoning given in the critique. It includes teacher questions and student activities designed to overcome the problems in the original. Citing the strategy numbers helps make the critical thinking infused explicit, and offers cross-referencing for others to better see what is being done in the new lesson and why. Readers of the remodel can refer to the strategy descriptions given in the "Strategy" chapter, if the function of the strategy is unclear to them. Furthermore, citing the strategy provides a check for the writer, who, during the writing and revision process, can evaluate the questions and activities to make sure that they do in fact engage the students in that particular dimension of critical thought.

The list of "Strategies used to remodel" helps readers who want to better understand a particular strategy, or want ideas for applying it, to easily find examples. As the readers read the "Remodelled Plan", they can easily refer to this list for the names of the strategies cited.

The "Objectives" provide an opportunity for writers of remodels to summarize their work, and show the readers how the strategies apply to the content, that is, to show the relationship between the content and critical thought. Writing objectives, looking at what you've written, and making the goals explicit as a list of what students will do, helps the writer ensure that the remodel does achieve the goals as stated. If not, the goals should be added to the remodel or dropped from the objectives. (Does the activity as described *really* have students carefully and fairly evaluate these assumptions?) Objectives can also show relationships between the strategies as they apply to that lesson; they make explicit that, in this case, this one strategy is (or these three strategies are) used in the service of this main strategy. For example, "Students will practice dialogical thinking by considering evidence and assumptions from multiple perspectives." Reading through the objectives of other people's remodels can make it easier to find ideas in them to use in one's own work. When confronted with a particular remodelling problem, reading the objectives of other remodels is an easy way of finding out which remodels can provide help or inspiration.

The finished form of the complete "remodel sets" and the separation and order of their elements is not intended to suggest the precise order in which the elements are developed or written. Generally, the three major components are begun in rough form: an initial statement of key parts of the original and their functions, its most obvious strengths and weaknesses, and provisional revisions are usually jotted down first.

The writer can then step back and evaluate these rough ideas and begin to analyze the situation more deeply. Does my critique really get at the heart of the matter? Is the evaluation fair, accurately stated, and properly justified? Does my remodel really address the flaws I've identified? Could I add something to take the lesson more deeply into the subject? Am I missing a good opportunity to encourage careful, honest thought? Are the main points of the remodel explained or justified by what I've said in the critique?

The remodeler may also want to review pertinent strategies, skim other remodels for ideas, and share their work with colleagues for comments before beginning a final rewrite. When the three main components are in relatively finished form, the writer can list the strategies used. The final version of the "objectives" is usually written last and checked to ensure that it reflects the remodel.

Although going through an extended process like this may seem like a lot of unnecessary work, and you needn't write up every instance of infusing critical thinking in polished form, we encourage you to put at least some of your work in this form for the following reasons:

- First impressions and initial ideas about what to do may be misleading and are rarely as valuable for either students or colleagues as a finished product which has been carefully evaluated and revised.
- The evaluation, revision, double-checking, and analysis provide crucial opportunities for teachers to develop the ability to engage in careful critical thought.
- Having to organize one's ideas and express them clearly helps the writer to more thoroughly probe those ideas, and discover other ideas.
- An extended process creates a finished product which is clearer and more helpful to colleagues with whom it is shared, than rough notes and scattered ideas would be.
- The objectives most worthwhile to pursue in the remodel will rarely be apparent until after the analysis and critique of the original lesson plan and the development of a remodelled lesson.
- Revision after further analysis can correct such mistakes as failing to include crucial points, or covering the material in a superficial or tangential way. It's remarkably easy to blast a critique for missing an important opportunity for developing critical thought, but then neglect to take advantage of the opportunity oneself. It's easy to miss the main point, purpose, or context of a topic, principle, or skill, when first considering it. It's easy to write fabulous-sounding objectives and then fail to fulfill them.

We therefore recommend a more extended process of producing remodels, with the elements given above, whether done in that order or not. (For example, the first step might be to confer with colleagues. With some lessons, one might have to review some strategies, remodels, or the subject introduction before being able to come up with remodel ideas.) Whatever process you use, we strongly encourage you to gain some experience in the careful and complete analysis and evaluation required to produce well written, complete remodel sets.

## How to Use this Book

You may choose to read this book as you would any other book, but if you do, you will probably miss a good deal of the benefit that can be derived from it. There are no algorithms or recipes for understanding or teaching critical thinking. Although we separate aspects of critical thinking, the global concept of the truly reasonable person is behind each aspect, and each aspect relates both to it and to the other dimensions. Thus, to develop critical thought, one must continually move back and forth between the global ideal of the rational and fairminded thinker and the details describing such a thinker. Similarly, although we separate the aspects of staff development for integrating critical thinking into instruction (understanding the concept, critiquing present practice, formulating remodels), teachers must continually move back and forth between these activities.

If you are a K-3 teacher and you want to improve your ability to teach for critical thinking, this book can help you develop the ability to remodel your own lesson plans. Your own teaching strategies will progressively increase as your repertoire of critical thinking strategies grows. As you begin, try to develop a baseline sense of your present understanding of critical thinking and of your ability to critique and redesign lesson plans. The critiques and remodels that follow, and the principles and strategies that precede them, may provide an immediate catalyst for you to

take your lesson plans and redesign them. But the longer critiques and remodels here might seem intimidating. Some of the strategies may seem unclear or confusing, and you may bog down as soon as you attempt to redesign your own lessons. Keep in mind that in some of our remodels, we put as many ideas as we could, in order to provide as many examples and varieties of applications as possible. Thus, some of the remodelled plans are longer and more elaborate than you might initially be willing to produce or teach. The purpose of this book is not to simply give you lesson ideas, but to encourage you to develop your own.

We therefore suggest alternative approaches and ways of conceiving the process:

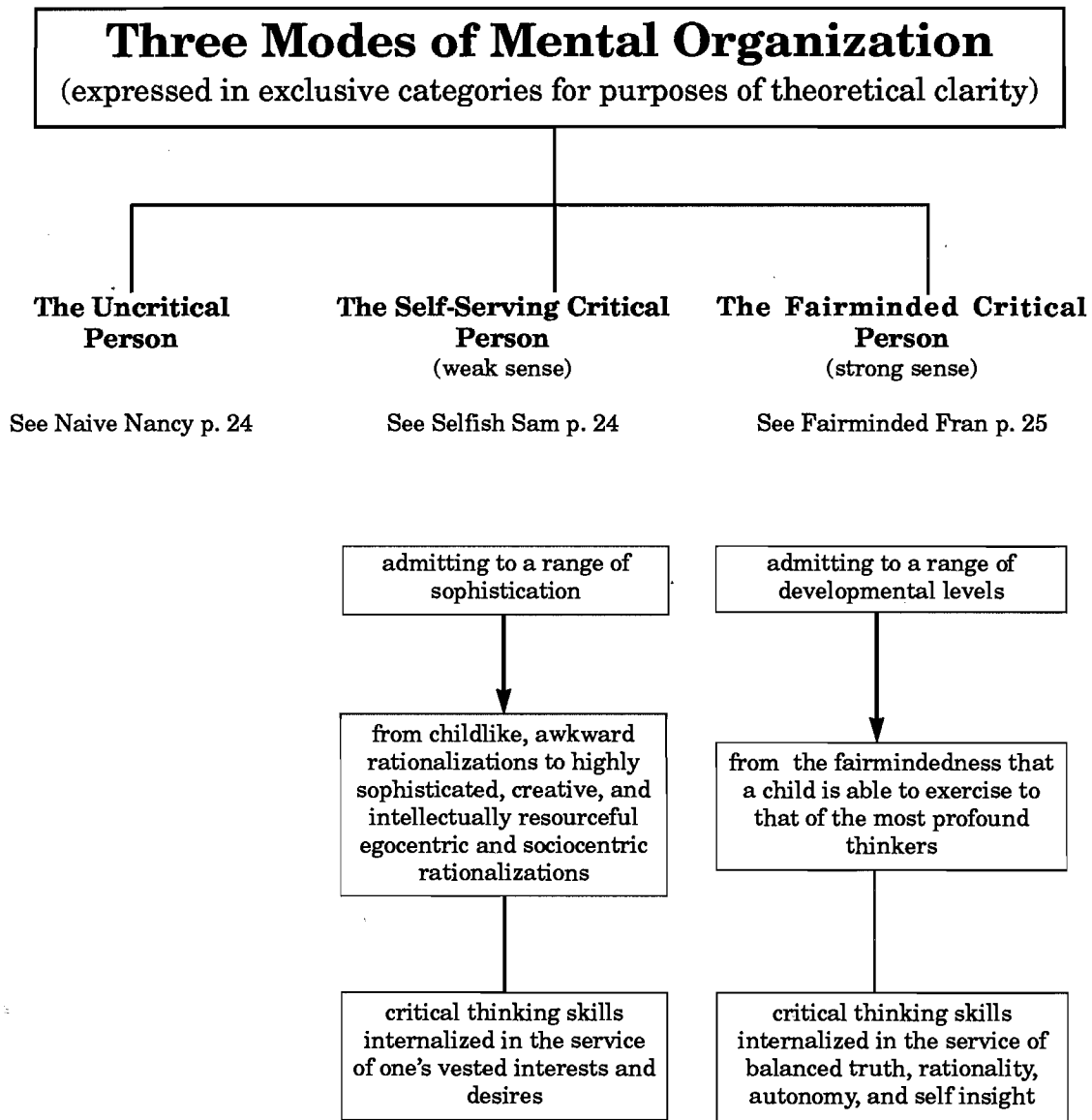
- Read through the strategies and a couple of remodels, then write critiques and remodels of your own. After you have attempted a critique and remodel, read our critique and remodel of a similar lesson. By using this procedure, you will soon get a sense of the difficulties in the critique-remodel process. You will also have initiated the process of developing your own skills in this important activity.
- Another way of testing your understanding of the critical insights is to read the principle section of a strategy, and write your own application section.
- You could review a remodel of ours and find places where strategies were used but not cited and places where particular moves could be characterized by more than one strategy.
- You may want to take several strategies and write about their interrelationships.
- Or you might take a subject or topic and list significant questions about it. Share and discuss your lists with colleagues.
- If, when reviewing a remodel, you find a particular strategy confusing, review the principle and application in the strategy chapter. If, when reading the strategy chapter, you feel confused, review the critiques and remodels of the lessons listed below it. If you are still confused, do not use the strategy. Review it periodically until it becomes clear.
- When remodelling your own lessons, you will probably find that sometimes you can make more drastic changes or even completely rewrite a lesson, while at other times you may make only minor adjustments. Some of your remodels may make use of many strategies, say, two or more affective strategies, and a macro-ability requiring the coordinated use of several micro-skills. For other remodels, you may use only one strategy. It is better to use one clearly understood strategy than to attempt to use more than you clearly understand.
- You may want to begin remodelling by using only one or two strategies clearest to you. After remodelling some lessons, you will likely find yourself spontaneously using those strategies. You could then reread the strategy chapter and begin infusing additional strategies with which you feel comfortable. Thus, as the number of strategies you regularly use grows, your teaching can evolve at the pace most comfortable to you.
- If students don't grasp a critical idea or skill when you introduce it, don't give up. Critical insight must be developed over time. For instance, suppose the first attempt to get students to fairly-mindedly consider each other's views fails. It is likely that students are not in the habit of seriously considering each other's positions, and hence may not listen carefully to each other. If you make restating opposing views a routine part of discussion, students will eventually learn to prepare themselves by listening more carefully.
- Although the main purpose of this book is to help you remodel lesson plans, we have not limited our suggestions to the remodelling process. We strongly urge you to apply the insights embedded in the strategies to all aspects of the classroom (including discussions, conflicts, and untraditional lessons such as movies). You may also use our remodels or sections of them. Though many of our lessons are too long for one class period, we did not suggest where to break them up, nor did we provide follow-up questions. If you do experiment with any of our remodels, you will probably have to remodel them somewhat to take your students and text into account.

- We urge you to apply your growing critical insight to the task of analyzing and clarifying your concept of education and the educated person. Of each subject you teach, ask yourself what is most basic and crucial for an educated person to know or to be able to do. Highlight those aspects and teach them in a way that most fosters in-depth and useful understanding.
- Texts often have the same features — whether problems or opportunities for critical thought — occurring over and over again. Hence, remodelling a couple of lessons from a text can give you a basic structure to use many times over the course of the year.
- When comparing your work to ours, keep in mind that this is a flexible process; our remodel is not the only right one. Any changes which promote fairminded critical thought are improvements.

However you use what follows in this book, your understanding of the insights behind the strategies will determine the effectiveness of the remodels. Despite the detail with which we have delineated the strategies, they should not be translated into mechanistic, step-by-step procedures. Keep the goal of the well-educated, fairminded critical thinker continually in mind. Thinking critically involves insightful critical judgments at each step along the way. It is never done by recipe.

*Lesson plan remodelling as a strategy for staff and curriculum development is not a simple one-shot approach. It requires patience and commitment. But it genuinely develops the critical thinking of teachers and puts them in a position to understand and help transform the curriculum into effective teaching and learning.*

Diagram 1

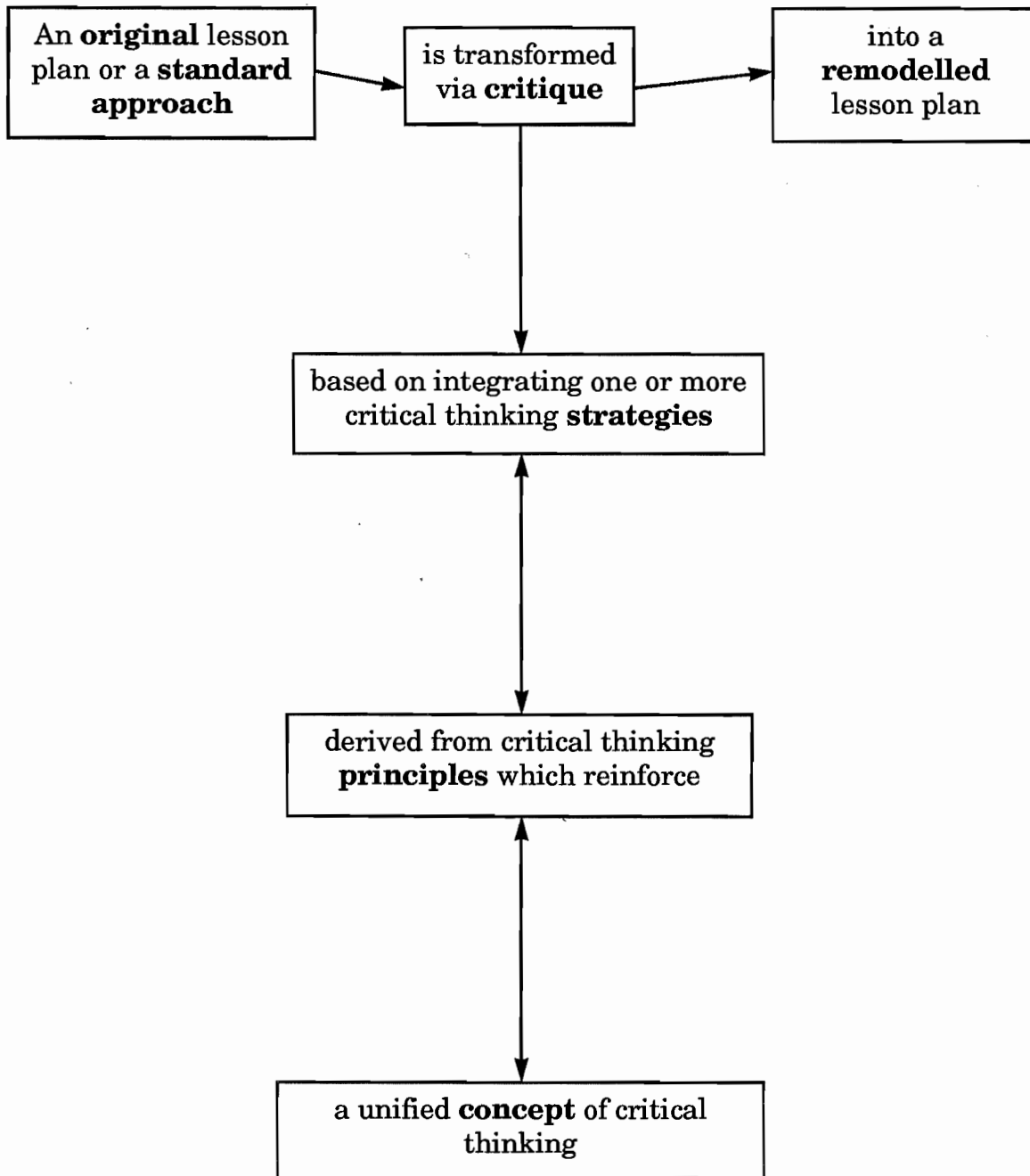


**Note**

Children enter school as fundamentally non-culpable, uncritical and self-serving thinkers. The educational task is to help them to become, as soon as possible and as fully as possible, responsible, fairminded, critical thinkers, empowered by intellectual skills and rational passions. Most people are some combination of the above three types; the proportions are the significant determinant of which of the three characterizations is most appropriate. For example, it is a common pattern for people to be capable of fairminded critical thought only when their vested interests or ego-attachments are not involved, hence the legal practice of excluding judges or jury members who can be shown to have such interests.

Diagram 2

## Critical Thinking Lesson Plan Remodelling





### Diagram 3

## The Perfections and Imperfections of Thought

clear	_____	vs	_____	unclear
precise	_____	vs	_____	imprecise
specific	_____	vs	_____	vague
accurate	_____	vs	_____	inaccurate
relevant	_____	vs	_____	irrelevant
consistent	_____	vs	_____	inconsistent
logical	_____	vs	_____	illogical
deep	_____	vs	_____	superficial
complete	_____	vs	_____	incomplete
significant	_____	vs	_____	trivial
adequate (for purpose)	_____	vs	_____	inadequate
fair	_____	vs	_____	biased or one-sided

There are qualities of thought we should encourage whenever possible. We call these standards "perfections" of thought. We should continually help students become aware of them, to examine their own thinking to see whether it is clear or unclear, specific or vague, accurate or inaccurate,.... We should use these standards explicitly in giving students feedback in each and every subject matter domain.

# The Pledge of Allegiance

(1<sup>st</sup>-3<sup>rd</sup> Grades)

## Objectives of the remodelled lesson

The students will:

- discuss the meaning of the Pledge of Allegiance
- begin to develop a concept of 'good citizenship'
- develop an appreciation for 'our republic', 'liberty', and 'justice'
- begin to develop insight into sociocentricity and the need for integrity by comparing ideals to actual practice and comparing U.S. and French ideals
- explore the relationships between symbols and what they represent

## Standard Approach

The teacher explains the difficult words in the pledge, and the class discusses the flag and the importance of patriotism.

## Critique

The lessons we reviewed on the subject over-emphasized the flag, while de-emphasizing allegiance to the country. They tended to confuse our ideals with our practice, thereby failing to suggest that it takes work to better live up to ideals. The common belief that loving your country means finding no fault with it is a major obstacle to critical thought. Fairminded thinking requires us to consider criticisms.

The lessons we reviewed do not fully explain the ideas in the pledge; therefore, students are making a promise they don't understand. Ideas as important and complex as 'good citizenship' aren't covered in sufficient depth.

Furthermore, many lessons lead students to believe that our ideals are uniquely American, ignoring how many other countries have similar ideals. This practice encourages sociocentric stereotyping of non-Americans. Therefore, we suggest that students discuss ideals that others share with us.

The remodel can be substituted for any lesson on the pledge. Some teachers may also want to have students critique the pledge lesson in their text.

## Strategies used to remodel

- S-14** clarifying and analyzing the meanings of words or phrases
- S-32** making plausible inferences, predictions, or interpretations
- S-27** comparing and contrasting ideals with actual practice
- S-7** developing intellectual good faith or integrity
- S-29** noting significant similarities and differences
- S-2** developing insight into egocentricity or sociocentricity

## Remodelled Lesson Plan

We have designed this lesson as a complete third grade level discussion. We believe, however, that the pledge should be discussed as early as the children recite it. For first and second grades, use as much of this lesson as your students can understand.

Teachers of second and third grades may have a pre-activity. Groups of students could use the dictionary to look up the words in the pledge and rewrite the pledge in their own words. We then recommend a thorough discussion of the pledge, such as that described below.

- A pledge is a promise. What is a promise? Why keep promises? How do you feel when someone breaks a promise to you? Is something a promise if you have no choice about whether or not to make it? **S-14**

- Allegiance is loyalty. (Use 'allegiance to a friend' as an analogy to enhance discussion.) So we are making a promise to be loyal. Loyal to what? (Flag and country.) The flag is a symbol of our country. (If necessary, discuss the meaning of 'symbol'.) To be loyal to the flag is to show respect for it. We do this as a way of showing respect for our nation. (Discuss our country's name.)

- "And to the republic for which it (the flag) stands." Our country is a republic. That means that we have the right to pick our leaders. (Compare this to other forms of government.) Do people in every country get to pick their leaders? If we select our leaders, then who is responsible for our government? **S-32** Why? (Discuss how the country is made up of land, people, and government, and so we have to care for all three.)

- Our country has ideals, some of which are in the pledge. (Discuss 'ideals'.) 'Indivisible' means something that stays whole, and is not split into parts. (Use households as an analogy to generate a discussion of why unity is important.) (Define 'liberty' and 'justice'.) We say "with liberty and justice for all." Why are these things important? How do you feel when you are treated unfairly? How would you feel if you couldn't decide anything for yourself? (Then discuss that last phrase, and ask who is meant by 'all?') Is the idea that everyone is free and is always treated fairly a fact or an ideal? **S-27** What is the difference between a fact and an ideal? (Discuss) Are freedom and fairness easy or hard for a country to achieve? (Discuss) **S-7**

- Therefore, when we say the pledge, we promise to respect the flag and be good citizens. Since we live in a republic, the citizens are responsible for the government. So we promise to take care of the land, keep our country whole, and strive to make our government treat everyone fairly and let people be free.

The teacher should point out that the students are not required to say the pledge, that they have a choice to decide whether they want to make this promise this way.

You might want to tell the students that the French people hold the ideals of liberty, brotherhood, and equality. Have the students compare these to our ideals, then ask, "What do French and American points of view have in com-

mon?" (This could be a good place to have students critique the implications of their texts and why it was written that way: the tendency to want to think of ourselves as the only good people.) **S-2**

The next section is an introduction to the idea of a symbol. It helps the students distinguish between symbols and that which they represent.

**Symbols S-29**

You might begin with our flag, the skull-and-crossbones sign, and traffic lights as examples of symbols. Ask the students for more examples. Then ask, "Is there a symbol for you?" Use the analogy of the students' names as symbols of them in the following discussion: Is a symbol the same as the thing it symbolizes or stands for? Is the symbol as important as what it symbolizes? Why might people get upset when a symbol is mistreated? Is it right to treat or react to the symbol the way you treat or react to the thing it symbolizes? Why or why not?

*The purpose of this handbook is to explain critical thinking by translating general theory into specific teaching strategies.*

# Does Earth Move?

(3<sup>rd</sup> Grade)

## Objectives of the remodelled lesson

The students will:

- discuss the importance and difficulty of openmindedness and intellectual courage by discussing Galileo's trial
- evaluate behavior and discuss thoughts underlying feelings of various parties involved
- relate the issues raised to their own lives

## Original Lesson Plan

### *Abstract*

This lesson covers the following points: Copernicus disagreed with others and said that the Sun, not the Earth, is the center of the solar system; later Galileo began to agree with Copernicus; some people got mad and had Galileo arrested. Students discuss the differences between the old and new ideas about the solar system and perform an experiment which shows why it is hard to say which theory is correct. Students play-act "Galileo's Trial" and discuss whether or not people forgot about Galileo's ideas after he had been put under house arrest.

from *Who Are We?*, Sara S. Beattie, et al.  
The Houghton Mifflin Co. 1976.  
pp. T68-T71.

## Critique

This lesson misses the opportunity to discuss the importance of openmindedness and intellectual courage. Galileo's life presents an excellent example of someone who was punished for having a good idea, because the people around him were closedminded and refused to listen. Yet the lesson, because it doesn't relate the material to the students' lives, fails to foster insight into the importance of putting aside prejudices and fears, listening openmindedly, and speaking out for one's beliefs. Nor does it foster insight into the students' egocentricity by having students reflect on times when they have closedmindedly rejected a new idea.

## Strategies used to remodel

- S-6** developing intellectual courage
- S-4** exploring thoughts underlying feelings and feelings underlying thoughts
- S-7** developing intellectual good faith or integrity
- S-20** analyzing or evaluating actions or policies
- S-2** developing insight into egocentricity or sociocentricity
- S-34** recognizing contradictions

## Remodelled Lesson Plan s-6

When discussing Galileo's trial, encourage students to reflect on the importance of intellectual courage and openmindedness, by having the class discuss what their text describes.

- Why did people get mad at Galileo? What were they assuming? (That is, what might they have been thinking that made them angry?) **S-4** Who was in a better position to know if he was right, Galileo or his critics? Why? What should have happened?

- If Galileo was punished for speaking out, do you suppose other people felt free to say they agreed with him? If you had lived then and knew about this, would you have spoken out for his ideas, or kept quiet to keep out of trouble? How might you have felt about that? Which do you think is wiser, saying what you think or staying out of trouble? **S-7**

- Should Galileo have changed his mind or kept quiet because everyone disagreed with him? **S-20**

- Have you ever gotten mad when someone questioned a belief of yours? Is that a good thing to do? Why or why not? **S-20** Did you ever miss out on learning a new idea because you were angry and wouldn't listen? What can you do about this problem? **S-2**

- Have you ever been in Galileo's position where you said something that everyone disagreed with? How did the other people react? How did you feel? Why? Did you change your mind? Why or why not? Was it hard to speak out? Why or why not? **S-4**

- Is there something wrong with believing that other people should listen carefully to you, and take your ideas seriously, but you don't have to listen to them? **S-34**