

LESSON PLANNING & ASSESSMENT

PREPARED FOR THE
READING & WRITING FOR CRITICAL THINKING PROJECT

GUIDEBOOK VI

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This guidebook is intended as supplement to an interactive course. It is not intended for general distribution without an accompanying course presentation. It is intended as a guide for educators participating in the RWCT project who are being prepared to deliver workshops/courses to fellow educators.

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PART I OVERVIEW OF THE COURSE



The workshops that make up the Reading & Writing for Critical Thinking (RWCT) Project share instructional methodology with teachers who work in national educational systems that have detailed and busy curricula, reinforced by frequent testing of the students. It is not surprising, then, that questions of *timing* (“How do we fit these new ideas into a very crowded school day?”) and *assessment* (“How do we mark students on their participation in an open-ended discussion?”) are raised so frequently in our sessions. This Guidebook was prepared to give systematic treatment to both these topics.

In both parts of this short course, care should be taken to stress that participants are invited to take whatever parts of these presentations they find helpful and feasible. We recognize that whatever changes teachers wish to make must function within a school culture and a legal structure that already may make specific requirements for lesson planning and assessment. We also realize that the demands on teachers’ time are great. However, we trust that many of the methods introduced here will find a home in the participants’ classrooms.

Expected Outcomes

At the conclusion of the workshop, it is expected that the participants will be able to

- plan a lesson of one period’s length or longer that incorporates activities to encourage *evocation*, *realization of meaning*, and *reflection*;
- plan a lesson that encourages higher order thinking strategies, even as it teaches certain subject matter;
- plan and manage an *interdisciplinary thematic unit* on a topic; and
- plan and use a range of qualitative assessment strategies that are appropriate for monitoring and assessing active learning and critical thinking.

It also is expected that the participants will form concrete plans to try in their own teaching a selection of the methods for planning and assessment that are introduced in the workshop.

Course Structure and Timing

The course is divided into six parts.

Part I: Review of the Participants' Implementation of the Previous Workshop's Strategies

This discussion should lead naturally into the next activity.

Part II: Presentation of Strategies for Lesson Planning

Raising questions about planning for instruction. Here, as an evocation activity, the participants raise questions about and problems (as well as successes) they have had in planning for active learning and critical thinking.

Presenting a lesson-planning format and discussing its parts. 1. Generic Lesson Planning. *A special note to the workshop presenters:* This section reverses the usual pattern of RWCT workshops, in which we try something first and then discuss it. Here you will describe and discuss the parts of an RWCT lesson plan before the participants try to prepare one. It will be useful for you to familiarize yourself with the points presented here, and either make those points with the group, or other points like them. When the lesson plan addresses instructional activities for the Evocation/Realization of Meaning/Reflection model, we provide a brief reminder of many of the strategies the participants already know. Experience has shown that it is worth the time to remind the participants of the variety of teaching strategies they have learned in RWCT.

2. Planning and Managing Thematic Units. Here, too, the rationale for and the steps to planning an interdisciplinary thematic unit are explained and discussed before they are practiced.

Part III: Guided Practice of Strategies for Lesson Planning

After walking through the lesson planning format together, participants are asked to plan their own lessons. They may do this individually and then share them at their tables before presenting them to the

whole group. The presenters should circulate among the tables to answer questions and generally help participants with their planning. *Note that it is advisable to do guided practice of the generic plan before presenting and practicing the planning of thematic units.*

Part IV: Presentation of Strategies for Assessment.

The second half of the workshop follows the same format as the first half; that is, we present and discuss an approach to assessment first, and then practice it.

1. Raising questions about assessment. To begin the discussion of assessment with an evocation activity, in which the participants share questions and problems (as well as successes) they have had in assessing active learning and critical thinking.

2. Presenting and discussing several assessment strategies. *Note to the presenters:* You should familiarize yourselves with the descriptions of these activities as they are provided by the text, because you will need to explain the activities to the group. You will want to emphasize the fact that the kinds of assessments presented here may be carried on at the same time as other mandated assessments. To make clear the distinction between the assessment strategies presented here and traditional testing, it may be useful to keep returning to the purpose of the assessments: Who needs to know? What do they need to know? Why?

Part V: Guided Practice of Strategies for Assessment

Participants plan the assessment of one lesson in small groups, with the guidance of the presenters. They are encouraged to use a variety of assessment strategies as they draft the assessment plan for a lesson.

Part VI: Planning for Implementation

Participants develop specific plans for trying these methods of planning *and* assessment in their classrooms. They also agree on a time and place for their interim or monthly meetings, during which they will discuss the implementation of the methods. Some time should be spent going over the plans for these meetings with the participants, but especially with the people who will be expected to facilitate the meetings.

Schedule of the Workshop

This short course should be scheduled to share a 4- to 5-day time frame with another short course, normally Cooperative Learning (see Guidebook V). Depending on the presenters' preferences and the participants' interests, the timing of activities for the present short course may be handled several ways. One model is shown here:

(Days 1 and 2 might be devoted to Cooperative Learning)

Day 3 (a.m.) Review of last workshop's implementation

(a.m.) Questions about lesson planning

(a.m.) Presentation on generic lesson planning

(p.m.) Guided practice of generic lesson planning

(p.m.) Presentation on thematic units

Day 4 (a.m.) Guided practice of thematic units

(a.m.) Questions about assessment of critical thinking

(a.m.) Presentation of strategies of assessment

(p.m.) Guided practice of assessment strategies

(p.m.) Planning for implementation

(p.m.) Workshop evaluation

Materials Needed for the Workshop

The workshop just described needs relatively few materials. Early in the session you will need to have a transparency or a chart made of the model lesson plan, and also of lists of the names of the instructional strategies presented for the stages of evocation, realization of meaning, and reflection. Also, you will need a list of the strategies of assessment discussed in this guide.

You will need a chalkboard and chalk, chart paper, and tape. You also may need an overhead projector and marking pens for transparencies. Also, take along about 200 blank index cards, to use for the daily monitoring. It would be helpful, but not essential, if participants could bring along a textbook and a plan for a lesson they intend to teach in the coming weeks.

Key Terms for Careful Translation

Note that many sessions will be translated from English into the local language and back. Moreover, it is likely that more than one translator

will be employed. Careful translation is important throughout, but accurate translation of key terms is absolutely essential. Often translation of terms is made difficult when no exact matching terms exist in the two languages. Thus, it is essential that you “calibrate” the translations by showing the translators the list of terms contained in the glossary of this Guidebook, in advance of each workshop, and explain each term until the translator is satisfied he or she has a term that matches closely. You should take a minute and add to the list any other terms you know you will use repeatedly. In time you may come to use the terms in translation yourself, both to save time and to build bridges of understanding with your in-country counterparts.

Evaluation of the Workshop

Evaluation and monitoring of all our activities helps us keep our work on track, and also gives us the information we need to make the courses better suited to the needs of the participants. You should plan to set aside time at the end of each day to carry out daily monitoring of the day’s activities. You also should plan to conduct an evaluation at the end of the session. Within 10 days of the end of the session you should write a report of the workshop, as described in the separate document, *RWCT Project Monitoring Procedures*.

Daily Monitoring

Leave 5 minutes at the end of each day for all participants to answer three questions on index cards, which you will distribute to them (see the three questions that follow). People should sign their names. Explain that these are not test questions: There is no right or wrong answer. They are intended, rather, as a way for each participant to communicate with you. It is a good idea to have your translator write these questions on the chalkboard or overhead projector.

1. What, in your opinion, were the most important concepts discussed today?
2. What questions do you have at this point in the workshop?
3. Make any general comment you wish to make.

You will want to read these before the next gathering, of course. It is a good idea to begin the next session with the comments and with answers to the questions.

Final Evaluation

At the conclusion of the workshop, you will need to set aside time for two types of evaluations: one is a free write, and the other is the completion of an evaluation form.

Free write. Distribute paper to the participants. Ask them to write for 10 minutes without stopping about the workshop they completed. It would be a good idea for your translator to write the following question on the chalkboard or transparency: What is in your mind right now about the workshop you just completed?

Evaluation form. Distribute the evaluation form found on the next page and ask the participants to complete it.

Discussion of Previous Progress

Since the previous workshop participants will have tried some of the techniques that were introduced there, and will have shared the results of these trials during one or more interim meetings with their peers, they may be eager to discuss what has happened. Also, problems may have arisen that need attention—questions that may or may not have been raised or addressed adequately at the interim meetings.

It is suggested that you distribute index cards and ask participants to write answers to the following questions:

1. What new teaching strategies have you tried since the last workshop?
2. How did it go for you and your students?
3. What is one question you have about the strategy?
4. What is one specific question you have about planning for instruction, or about assessment of students' learning?

Next, you may have people share their answers with the groups at their tables, and then nominate one comment or question from each table to be dealt with in the whole group. Note that you will be required to “think on your feet” during this time, so you should feel free to explain in advance that answers to some questions will have to wait until after this first short course is complete—especially because many of the questions are likely to be answered during the proceedings.

Be particularly alert for questions having to do with planning (How do I fit these methods into my crowded agenda?) and assessment (How do I give marks for a discussion?), and point out that these will be the subject of this short course.

PART II LESSON PLANNING

Presenting the Lesson Plan

Raise Prior Questions About Lesson Planning

If questions about lesson planning did not come up in the preceding question-and-answer session you should invite them now. Ask the participants the following questions:

1. Many of you have spoken of the difficulty of working inquiry strategies and critical-thinking strategies into your crowded schedules. Who can give an example of a time when this has been a problem?

Have the interpreter label a sheet of chart paper “Problems,” and record four or five offerings on the sheet.

2. Now, who can think of times when you *have succeeded* in working these activities into your lessons?

Have the interpreter label a sheet of chart paper “Successes,” and record four or five more offerings on this sheet.

Explain that the focus of the next several hours’ activity will be on methods of planning for active learning and critical thinking. Participants should be particularly alert for solutions to the problems they have identified.

Present the Outline of the Lesson Plan

The interpreter already should have prepared for you a translation of the following lesson-plan outline. Display it now, and use it to talk through the points you will make. (Remind the participants that they have a copy of the lesson-plan format in the Guidebook for this short course.)

Lesson Planning for Critical Thinking

Before the Lesson

Motivation:

Why is this lesson valuable?

How does it relate to what I have already taught and to what I will teach?

What opportunities does the lesson offer for critical thinking?

Objectives:

What specific knowledge and understandings will be explored or conveyed? What will the students *do* with that knowledge or those understandings?

Prerequisites:

What must a student already know and be able to do in order to learn successfully from this lesson?

Assessment:

What evidence of the students' learning will be sought?

Resources and Time Management:

How will resources and time be allocated to the activities?

Grouping:

How will the students be grouped for instruction?

The Lesson Proper

Evocation:

How will students be led to formulate questions and purposes for learning, and to examine their own prior knowledge?

Realization of Meaning:

How will the content be explored by the students? How will they monitor their understanding of the content?

Reflection:

How will the students make use of the meaning of the lesson? How will they be guided to consider new knowledge, seek answers to questions that remain, and resolve points of confusion?

Closure:

What conclusions should be reached by the end of the lesson? How much resolution of the issues is desirable?

After the Lesson

Extension:

To what further learning can this lesson lead? What should students do once they have completed this lesson?

Discussing the Lesson-Plan Format

After displaying the lesson-plan format, take the participants through its parts. We have divided the planning process into three stages: Before the Lesson, The Lesson Proper, and After the Lesson.

Before the Lesson

Explain that as teachers begin to choose the subject matter for a lesson and frame their approaches to that subject matter, they traditionally ask general questions about the importance of the topic, and their overall purposes and aims. Teachers of critical thinking, however, do something more: They look at the material a second time for all the ways it might support active learning and critical thought. Both sets of considerations are important.

Motivation, Part I: Why is this lesson valuable?

- How does it link to other topics the students have studied, or build on other skills they have learned?
- How will it prepare them for further studies and understandings in this discipline?
- How does it connect to their personal experience and interests?
- What will it enable them to understand or to do in the future?

You might make the point that effective teachers are not robots; they teach from conviction and from the heart. Even if some of the students do not see the relevance to their lives of a lesson being taught, an effective teacher should understand and be persuaded of its utility.

Note that lessons can have different types of utility. One type has to do with learning in a discipline. A particular lesson may provide students with foundational concepts in a discipline that prepares them for further learning that they will do later. For example, a teacher may want students to understand the difference between a *constitution* and a *set of laws*, because this will prepare the students to understand later lessons on how they might go about having an unjust law amended.

The content of the lesson can have direct utility to students in their daily lives. A lesson that directs them to study an aspect of their community, for example, may be useful because it cultivates a “sense of place,” an appreciation of their surroundings. This is valuable not only

because it enhances a person's ability to find interesting details in familiar surroundings, but also because it helps individuals fight the message promoted by the popular media that all people should be living in a glamorous environment.

Point out that in addition to the value of its content, a lesson may be valuable because it teaches students learning processes; it teaches them to think. Thus, at the outset of their lesson planning, in addition to questions about the value of the lesson's content, teachers of critical thinking ask another set of questions about the learning processes the lesson promotes.

Motivation, Part II: What opportunities does the lesson offer for critical thinking?

- What information in this lesson can be discovered or constructed by the students?
- How can content be chosen or arranged for this lesson so that it is likely to evoke a range of personal responses?
- What are some important issues in this subject matter that invite more than one interpretation, or agreement and disagreement?
- How can the topic be examined productively from more than one disciplinary point of view?
- How can the lesson be used to develop skills of inquiry, analysis, reporting, and debate that can be applied to other topics?
- What aspects of the topic invite further inquiry or other action on the part of the students?

Stress that this will be a useful lesson that inspires the students to inquire, respond personally, debate, and act further in response to the material. Such a lesson is likely to make the subject matter meaningful and vivid, and also teach thinking and communication skills of life-long value. (This might be a good time to pause for a question: *Do we necessarily lose time in a lesson if we think of the advantages it offers to promote thinking, as well as the content it teaches?*)

Remind the participants that not all material—especially material from textbooks—easily lends itself to the types of thinking implied in this set of questions. That is why it is a good idea for teachers to ask such questions in advance, while there is still time to supplement the material from a textbook with a newspaper article, an orally delivered story,

or a photograph or painting that opens divergent possibilities for the lesson.

Finally, remind the participants that whatever the value we decide a lesson has, we should be ready to explain that value to the students. In the unlikely event that we cannot find any real value in a lesson, perhaps we can find an alternative to the lesson.

Objectives: What specific knowledge and understandings will be explored or conveyed? What will the students do with that knowledge or those understandings?

A teacher may have several objectives for each lesson. Ideally, objectives should be both *specific* and *demonstrable*; and some of them (but not necessarily all) should call for *higher order thinking*.

Specific objectives closely delimit their aims. For example, to say that we plan to teach about “the revolutions of 1848” is not as specific as to say we will teach about “the philosophical, political, and artistic sources of the revolutionary movements of 1848 in France and Romania.” The latter statement is more specific. But it is still not demonstrable.

A more important point may be that demonstrable objectives describe observable behaviors that students should be able to demonstrate or products they may create as a result of the lesson. An example of a demonstrable objective might be “Students will be able to name two examples each of the philosophical, political, and artistic influences on the revolutionary movements of 1848 in France and Romania.” This objective has become both specific and demonstrable. But it does not call for students to do higher order thinking.

Objectives that require higher order thinking ask students to do more than recall or understand information the teacher has presented./ Recalling and understanding ideas that the teacher or a book has presented can certainly have value; but teachers of critical thinking hope students will do other ambitious things with the content of a given lesson. Remind the participants that, as they saw in the levels or types of questions presented in Guidebook II, the range of thinking acts that students might perform with the content could be described as:

- *Knowledge*: Being able to repeat something essentially in the form in which it was heard.
- *Comprehension*: Being able to restate an idea in your own words or in a different way.

- *Application*: Identifying the relevance of an idea to another case; solving a new problem using a directly relevant strategy that one has been taught.
- *Analysis*: Finding causes and effects and other constituent parts of a complex idea.
- *Synthesis*: Combining several ideas into a new one: Creating a new version of an idea; taking an idea from one medium or genre and recasting it in another one; solving a complex problem by drawing from several ideas.
- *Evaluation*: Judging the adequacy of a particular idea or source as an explanation of something.

Teachers sometimes ask students to think in ways that do not fit easily into these categories, however. Invite the participants to think of other ways they would describe the kind of thinking they want their students to do. These types of thinking include the following:

- finding personal meaning in the theme or a detail from the material;
- thinking of examples from their own lives of ideas presented in the lesson;
- comparing and contrasting two or more ideas or entities;
- thinking of reasons that support a position students might take on an issue presented in the lesson;
- taking and defending a position against contrary arguments;
- imagining a different way of presenting an idea, or changing the parts of something to see what would result;
- deciding what still needs to be known about the topic; and
- deciding on the best course of action on an issue that arises from the lesson.

However we describe the types of thinking an objective calls for, putting these elements together—*specificity*, *demonstrability*, and *varied levels of thinking*—challenges a teacher to conceive objectives that will result in the students' learning the material, but at the same time require more active intellectual work than mere absorption.

There will be several objectives for a given lesson. For the topic of revolutionary activity in 1848, they might include a progression of objectives like the following:

1. Students will be able to name at least two each of the philosophical, political, and artistic influences on the revolutionary activity of 1848.
2. Students will be able to compare and contrast the roles of students and intelligentsia in the activities of 1848 and the central European revolutions of 1989.
3. Students will be able to craft an exploratory essay, with examples, on the relation between their political beliefs and loyalties and the political movements of the time.

A series of objectives like these may take the students through several kinds of thinking: coming to grips with information, delving into the implications of that information, and applying the meaning of it to their own lives. If the activity of preparing the objectives leads the teacher to design progressions of thinking into a lesson, teachers may agree that the results justify the time required.

Prerequisites: What must a student know or be able to do in order to learn successfully from this lesson?

- A. Prior knowledge about the content
- B. Ability to use the thinking and learning processes built into the lesson

It is common sense to note that students need to have prerequisite knowledge before learning a topic. Piaget and his colleagues defined learning as the process of assimilating new information to the knowledge of the world we already have, and in the process expanding the range of information we are capable of assimilating. It follows from this definition that students must have the necessary prior knowledge to benefit fully from a lesson. If their needs for information are not extensive, it may suffice if we give a background explanation (called an “advanced organizer”) before launching into the body of a lesson. If the information needs are greater, however, this requires organizing the curriculum so that what is learned today naturally builds on what was learned yesterday.

What is less obvious, especially as we try new modes of teaching and learning, is that students also need to develop prerequisite skills in the processes of thinking and learning. For example, we may wish to use

the technique of *clustering* in the evocation phase of a lesson on the sources of the revolutionary movements of 1848. If the strategy has never been tried with these students before, however, then the challenge of learning the technique may dilute the students' focus on the issues we want them to think about. To prevent that risk, we may wish to introduce the technique of clustering with a simpler topic, such as kinds of popular music, before using it to elicit the students' ideas about inflation. The need to develop prerequisite learning skills also applies to having students work in cooperative learning groups, or to practice study skills. (Again, if pausing to consider the prerequisite knowledge and process skills required by a lesson results in more students being able to learn from the lesson, the time required for this step will be justified.)

Assessment: What evidence of the students' learning will be sought?

- A. Evidence that students are learning the content of the lesson?
- B. Evidence that the students are adequately practicing the processes of thinking and learning?
 1. What kinds of thinking are the students expected to do? How will we know that they are doing it adequately?
 2. What learning strategies and group processes are the students expected to practice? How will we know that they are practicing them adequately?

It is advisable to consider the assessment of the lesson in advance of teaching it. As we stress later in this Guidebook, much of the assessment may go on during the lesson and not just afterward, as was traditionally the case.

Two types of questions are asked in the assessment. Teachers want to make sure that the material was learned. But teachers also want to know that students are learning to think and learning to learn.

Many strategies are available for carrying out assessment. Point out that because this is a large topic, it will be treated at length later in this Guidebook.

Resources and Time Management

How will resources and time be allocated to the activities?

Are there special texts or other resources needed for the class? These are taken into account at this stage.

Time management is more difficult. A range of choices is open to the teacher. If the single class period is the basis of planning, time devoted to activities must be handled carefully. Even seasoned teachers cannot

predict to the minute how long a group activity will need to achieve its purposes. Still, they try to make activities flow efficiently, taking advantage of such strategies as giving clear instructions before the students break into groups, so their work will not be stalled for lack of direction. If a “think/pair/share” activity is scheduled to run for 5 minutes, the teacher knows he or she will need to stop the “share” part after two or three statements, even if more students want to talk—and he or she will make a mental note to begin next time with the students who did not get to share this time. Finally, the teacher may plan an optional *extension* activity that students may perform outside of class, in case time runs short and some issues have not been explored adequately.

Another option is to plan the lesson over more than one period. One sensible strategy is to do an evocation activity at the end of one period, and leave the students to do the realization of meaning activities on their own (these may consist of individual reading and journal-writing, and the like). The reflection activity might take place during part or all of the next class, and can be followed by individual or small-group extension activities (to be due some time later) or by another evocation activity leading into another dimension of the topic, or a different topic.

Grouping for Instruction:

How will the students be grouped for instruction?

The RWCT short course that is introduced in Guidebook V, Cooperative Learning, presents many ways that grouping can be used to give students more initiative in the learning process. Among these were the strategies of Corners, Jigsaw, Teams/Games/Tournaments, and others. Even the decision to use or not to use the think/pair/share or the paired reading/paired summarizing strategy is a decision on the use of grouping for instruction. Such decisions are best thought out in advance of a lesson.

The Lesson Proper

The five previous short courses in the Reading & Writing for Critical Thinking Project have emphasized a three-part model of teaching and learning. That same three-part model of evocation, realization of meaning, and reflection is embedded in the lesson plan presented here.

Evocation: How will students be led to formulate questions and purposes for learning?

- How will students’ thinking be focused on the topic?

- How will curiosity be elicited?
- How will they be reminded of prior knowledge?
- How will they be led to formulate questions?

We consider strategies for evocation first. The teacher has a range of choices to make here, and the choices all serve the same purposes: to help the students summon prior knowledge about the topic, and to arouse their curiosity and purposes for learning. To put it another way, an effective evocation strategy motivates the students to active learning. Here we review a menu of activities that can serve in the evocation phase. All of them have been introduced in previous workshops. (It may be a good idea to have the interpreter post a list of strategies for the evocation phase as this discussion goes forward.)

Advanced organizer. Present background knowledge and arouse curiosity about a topic. For example, with respect to the revolutions in French and Romania in 1848, the teacher might read portions of a diary written during the period, and talk briefly about the spirit of the writer that is revealed there, before embarking on a detailed lesson about the period.

Focusing questions. Ask questions that will be answered in a presentation or reading. For example, in a science lesson, focusing questions may ask students to predict before a demonstration what they think will happen and to state their reasons for their predictions.

Brainstorming and paired brainstorming. Have individuals or pairs list what they already know about a topic. For example, listing everything they know about sea turtles, before reading an article about them.

Clustering. Have students brainstorm ideas about a topic, and use the graphic organizer of the cluster to relate those ideas to one another. To follow the sea turtle example, there may be clusters of details about their physical description, other clusters about their habitat, and other clusters about reproduction.

Directed reading-thinking activity. Break a text into portions and ask students to predict what will occur next in a story, or what they will learn next in an informational text.

Terms in advance. Give students a short list of terms from a text, and ask pairs of students to predict how those terms will function in the

text. For example, for Tolstoy's fable "The King and His Shirt," the terms might be *king, sickness, happiness, shirt, and poor man.*

Know/want-to-know/learn. Have small groups or a whole class list what they already know about a topic, and then frame questions to be answered by an inquiry.

Free write. Have students write freely on what they know, feel, and wonder about a topic before engaging in a lesson about it.

The participants may wish to pause here and add their own favorite activities to the list.

Realization of Meaning: How will the content be explored by the students?

A. Demonstration or Presentation: What content will be presented or explored? How?

B. Student inquiry: What will the students do to realize meaning during the lesson?

Point out that the next part of the lesson is expandable; it may be concluded in a single class period or it may be planned as an inquiry lasting several days or weeks. Two concerns govern this phase: one is getting the material to the students, and the other is to have the students actively investigate the material, searching for or constructing meaning from the encounter.

There is a range of strategies available to the teacher at this phase, and here we review a number of them that have been introduced before. (*It would be helpful to have the interpreter prepare a list of the following strategies to post while this discussion goes forward.*)

INSERT method. After they have brainstormed their knowledge about the topic of a text, ask the students to mark the text, noting passages that confirm what they knew or contradict what they thought they knew, passages that offer unexpected ideas, and passages about which they have questions.

Directed reading-thinking activity. This activity is described in the section on evocation.

Dual entry diary. Divide the pages in a notebook down the middle; on the left side have students note passages in a text that were important to them, and on the right side have them write a comment on the passage.

ReQuest procedure. Have of students take turns asking and answering questions about passages as they read through a text.

Reciprocal teaching. After a passage of a text is read by a small group of students, have students take turns playing the role of “teacher,” summarizing what was just read, putting questions to the other students about it, clarifying parts that are unclear, and predicting what will come next in the text—before passing the role of “teacher” to another student in the group.

Cooperative learning groups. These groups may feature discussion questions for the group to answer or problems for the group to solve; they may include assigned roles for students (such as moderator, recorder, reporter); they may ask students to teach aspects of the material to one another; and they may feature marking systems that reward students for taking responsibility for one another’s learning. *Note that cooperative learning strategies are the topic of Guidebook V.*

Enhanced lecture. Even though the teacher presents information in a lecture format, he or she prefaces the lecture with an evocation strategy to draw out students’ prior knowledge and their questions about the topic, then intersperses in the lecture opportunities for the students to question and discuss what has been presented (as in the think/pair/share activity that follows), and finally provides an opportunity for reflection.

Think/pair/share. Give the students a question from the day’s lesson to think about individually and ask them, perhaps, to write a reaction statement. Then they pair up and compare their responses with those of a partner, before a few pairs are called on to share their answers with the whole class.

Study guides. Give students a written guide that calls their attention to key parts of the text and guides their thinking about it. For example, given the journal of Christopher Columbus, the students might be asked to find passages that reveal his attitudes toward the islanders he met.

The participants may wish to pause here and add their own favorite activities to the list.

Reflection: How will the students make use of the meaning of the lesson?

- A. Reflective discussion or writing assignment
- B. Guided practice of the skill or concept introduced

Remind the participants that in the Evocation/Realization of Meaning/Reflection model, reflection is the phase in the learning act in which the students take what has been learned and do something with it. They explore its implications, consider its meaning in light of their own experience, or take sides on the issues it raises. Note that here we might expand our conception of this phase to include “application” as well as reflection. In some subjects in which operations are being taught, such as mathematics, science, or literary analysis, what may be desired after a preliminary understanding of the content has been reached—either as a substitute or as a complement to reflection activity—is guided practice, the application of the operation or strategy to new problems or new texts.

Choices for the reflection phase are plentiful. The selection will depend on the discipline under study, the level of the students, and the time available for the lesson. Many of these activities may be completed within a single class period, but some may be taken beyond the class period for home tasks or become follow-up activities on another day. The following set of activities that aid students in the reflection phase have been introduced previously. (Again, it will help if the interpreter has prepared a translated list of the following strategies for posting while this discussion goes forward. The presenter can then point to the title of each strategy as the gist of that strategy is reviewed.)

Reader response questions. When a text has been read that evokes subjective responses from students, ask questions based on the generic questions: What did you notice in this text? What did it make you think of? How did it make you feel? More specific questions probe details: What was the most important aspect of this text (or part of the story)? What was the most important sentence in the text? What was the most important word? What was the most important stylistic technique the author used?

Reviewing the dual entry diary entries. Ask the students to share what they wrote in their response diaries, and relate the ensuing discussion to their responses.

Shared inquiry discussion. Have the students consider and discuss *interpretive questions* that have been prepared in advance (an interpretive question is a real question, directly related to some aspect of the text, that can answered reasonably in at least two ways).

Save the last word for me. Have students write a quote from a text on one side of a note card and a comment about the passage on the other

side. Everyone is invited to comment on the passage, but the student who wrote the card has the last word.

Discussion web. Pairs of students list reasons to support affirmative and negative positions on an issue in the text that is posed as a binary question (for example, Should all AIDS patients be quarantined?). The pairs join other pairs and resolve the issue.

Debates. Often as an outgrowth of the discussion web activity, the class is physically divided and students argue the sides of an issue—literally changing positions by walking to other sides of the room as they change their minds.

Ten-minute essay. Students can write briefly and intensively on a topic to get out their reflections after studying it.

Exit cards. When time is brief, students can write on a note card (1) the most important idea we considered today; (2) one question they have about the material; or (3) one general comment about the material.

Story or concept chart. Following a discussion of a text that is one of a series of texts under discussion, the students now formulate answers to questions that have been asked about the other texts in the series.

Applications to other problems. After having used a certain procedure or form of analysis in class, ask the students to apply the same method to a new case or problem.

Know/want-to-know/learn, revisited. At the conclusion of the lesson, the students return to the K-W-L chart and decide what they learned in the lesson. Some of their questions may have remained unanswered, and there also may be new questions. If so, these questions can be the basis for further inquiry.

INSERT method, revisited. After the students have explored the text, they may construct a chart featuring the highlights of what they gained from their inquiry.

The participants may wish to pause here and add their own favorite activities to this list.

Closure: What conclusions should be reached by this lesson? How much resolution of the issues is desirable?

The teacher should decide in advance what sort of closure is best for this lesson. How much resolution is desirable? How much is possible for this topic? Are there certain facts, concepts, and principles that the students should have gained from it and should know what they have gained from it? These can be restated at this point in the lesson.

In a science class, for example, the lesson may have begun with predictions, observations, and discussions of cause and effect—all of which are free ranging. But it may be important for students to come away knowing, in concise form, the law of physics that is associated with the activity.

On the other hand, are there certain issues that will probably remain unresolved, at least for now? If so, we can acknowledge that the issue is being left unresolved, and ask for a restatement of the positions that are in conflict. We can relate those positions to the statements of thinkers over the years. We can discuss what sort of inquiry would be needed to resolve the issue further.

For example, after a lengthy discussion, students in a debate over social welfare policy may have divided themselves into two competing camps: Some of them argue that society needs to be generous and nurturing so that people from their infancy may cultivate the confidence and positive dispositions needed to become productive citizens. Other students argue that society should not be nurturing and generous, because that will only undermine people's initiative and make them lazy and dependent.

In this case, the most closure possible in one class period may be to restate the two positions clearly, relate these positions to the main tenets of liberal and conservative political thought (or to thinking in other domains, such as theology, ethics, or social psychology), and to consider the kinds of further knowledge and understanding that would be needed to resolve the issue. In effect, this last discussion sets the agenda for further inquiry by members of the class—either as a whole group or as task groups.

After the Lesson

Point out that following the lesson come the extension activities, if any are contemplated.

Extension: To what further learning or other activity can this lesson lead? How can we apply these processes to another act of inquiry? What ques-

tions are still with us to be explored? What should we do now that we have finished this lesson?

Extension activities serve a number of purposes. The most important is that they provide students an opportunity to work independently to pursue ideas or practice applications that were raised in the lesson. Because they are usually done outside of class, they are likely to give students the option of extending their learning beyond the school and into the community. A second advantage of writing extension activities into the lesson plan is that they take some of the pressure off class time to cover every aspect of a lesson.

Productive extension activities include many similar to those that follow. *It will be helpful to have a list of the names of these strategies ready to post as this discussion goes forward.*

Interviews. Students find people living in their communities who are authorities on the topic of study, and interview them. This option is most feasible if the topic supports it. For example, residents might be asked to tell the stories they have that illustrate relations between different national or ethnic groups. Or they might be asked to tell how families have coped with economic hardship. Or they might recall their memories of important historical events, such as World War II.

Independent investigations. In cases when the information in the textbook on a particular topic is exhausted, send students to the library to find out more about it.

Writing essays. Students can write essays in which they state their position on an issue that was debated in class.

Creative writing. Challenge students to write a creative piece in the style of an author who was studied.

Poster projects. Having taken a position on an issue (such as environmental protection), students can prepare posters, newsletters, or magazine articles to mobilize others to take action on the issue.

Dramatizations. Small groups of students, meeting outside of class time, can prepare dramatic enactments of a work or parts of a work to perform for others during class time, or to perform at an orphanage or a home for shut-ins.

Surveys. An issue debated in class can be tested in the school or in the community by means of a survey. People in the 15–18-year-old age range can be asked about their attitudes toward cigarette smoking. Their opinions can be compared with those in other age groups.

Data gathering. Students can post themselves at different places around town to gather data that can be pooled and analyzed in class. They may count, for example, the number of men and women seen smoking cigarettes compared to the total number of men and women observed. (Do the data vary by neighborhood?) Or they may count the proportion of people who open a door on a public building with their left hand or their right, and compare the results with norms about handedness (this can lead to questions about sampling: How many people would they have to observe before the proportions approached world norms?).

Applications to other cases. Here the students, having learned to do a kind of analysis on an example introduced in class, apply the same kind of analysis on their own to another example. Thus, students might discuss the extent to which the character of Brutus in Shakespeare’s *Julius Caesar* fits Aristotle’s definition of a tragic hero. On their own, they might now apply these same criteria to other heroes in Shakespearean tragedies.

The participants may want to pause here and add their own favorite activities to the list.

Planning Thematic Units of Instruction

In Guidebook IV there is an article titled “How Much Lead Poisoning?” (by Bucksnot Trout) that was based on a true story about inquiry and problem solving. The man who wrote that story works for an agency charged with protecting the environment. In this case, his nation’s government asked him to determine how best to protect children from the effects of lead poisoning. A question such as this cannot be answered easily by a single person because a good answer must be drawn from many perspectives.

A physician can determine the effects of different amounts of ingested lead on a human being, but she cannot enumerate all the ways people are exposed to lead originally. An environmental scientist can identify sources of lead in the environment, but she cannot tell how the

products that introduce lead into the environment might be manufactured differently to eliminate the lead. An industrial engineer can find ways to substitute safer ingredients for lead in many products, but she cannot tell if the companies that produce those products could afford to make those substitutions and generate enough profit to stay in business. An economist can determine how much it will cost to take lead out of the products that cause lead pollution, but she would not know how to write an environmental bill that would satisfy enough of the affected groups to stand a chance of being passed into law—it takes a political scientist to do this. In fact, it took all of these people—a physician, an environmental scientist, an industrial engineer, an economist, and a political scientist—working together over many months to create a proposal for a bill that would reduce lead pollution.

Inquiry in the real world is often like that: People divide a problem into its parts, find information from different disciplines, and work together to find a solution. As teachers have focused on preparing students for productive citizenship in the real world, many have made use of thematic units of instruction, because thematic units share many features with the processes of genuine inquiry.

Thematic units are usually extended lessons that approach several aspects of a single topic, often from the framework of more than one discipline. Thematic units may go beyond lectures and books, and employ a richer than usual variety of learning resources. They may have students engaged in researching different aspects of the topic at the same time, and they almost certainly involve students in making choices of what they will study, in deciding how they will pursue that study, and in carrying out the study.

Thematic units of study offer several advantages to students.

- They may follow the course of the students' and teacher's curiosity across disciplinary boundaries. Like real-life inquiries, they demonstrate the integrated nature of knowledge, and make natural connections to what students know and what they want to know.
- They actively engage students as learners in many levels of activity: to framing questions, to organizing inquiry, to finding resources, to collecting information, to organizing their findings, to presenting and teaching their findings to others. Thus they exercise a greater range of intellectual abilities than do traditional lessons.

- They allow students to transcend the limited perspectives of textbooks, and use the fullest available range of resources available on a topic.
- They offer opportunities for students to work cooperatively on meaningful tasks.

Thematic units also pose several challenges to the teacher and the students alike.

- They call for an extensive amount of organization, because the teacher must coordinate the activities of several groups of students, working over a period that may extend into many days.
- They require that the teacher ascertain that a range of resources is available that will be accessible to the students, both in terms of comprehensibility and in terms of physical access.
- They require that the host of skills students must exercise in the course of carrying out the unit of study be monitored by the teacher, and taught as necessary.
- They require a sophisticated approach to assessment, as teachers (and students) evaluate the work of students who are engaged in many different tasks and kinds of tasks.

Taking all these points into consideration, the potential benefits for the students are such that they outweigh the challenges.

Steps in Planning and Carrying Out a Thematic Unit

Thematic units require careful preplanning and thoughtful monitoring, all with a careful balance of providing for the students' initiative, but also with enough guidance from the teacher to make sure the study goes in productive directions.

The steps of a fairly elaborate approach to planning and teaching thematic units are given below. These may be simplified, in ways you may want to discuss later.

1. The topic for the unit is decided on.
 - a. The teacher considers a range of possible topics for a unit before broaching the idea with the students. A good topic may be suggested by something in the curriculum; for example, the students are studying wave motion in science, and there are sto-

ries in the news about wave damage associated with typhoons, so the topic of the unit might be *waves*. The topic may be anchored in the students' manifest interests, or a problem the class is having; for example, antagonisms have erupted between some students, and there are also stories in the news about the difficult negotiations for peace between Israel and the Palestinians, so the topic might be *conflict resolution*.

- b. Before suggesting the topic to the class the teacher should do some preliminary research to make sure there are enough resources to support several strands of inquiry suggested by a topic. Frustration will result if the students embark on a topic for which there is little information available.
 - c. The teacher may decide on the topic alone, or set out several good options and have the students choose the one they like best.
2. The topic is introduced.
- a. The teacher may tell a story or read an essay, such as the article "How Much Lead Poisoning?" and ask students what they already know about the topic of pollution and what they want to know.
 - b. The teacher may make some observations and pose a question: "I've been noticing how some children in our neighborhood have been yelling at each other, even fighting with each other. What kinds of things have you noticed people arguing about? I've also noticed on the news that the Prime Minister of Israel and the leader of the Palestinian people have been trying to make peace with each other. What kinds of things do you suppose they were arguing about? How did they try to make peace? What other examples can you think of in the world in which people have been trying hard to make peace with each other? What were they arguing about? How did they try to make peace?"
3. The students brainstorm subtopics.
- a. The teacher may lead the students to list subtopics of a large topic, or questions that invite students to investigate aspects of the topic. The class may together make a cluster of subtopics or questions related to the main topic. For example, the teacher may set out the topic of *peace making*, and ask the question "Why do people fight?" The students can be invited to ask questions of their own: "Why do nations fight? Who are the people

who make peace? How do they make peace? What are the skills of peacemaking? How is peacemaking practiced among nations? How is peacemaking practiced among small groups of people?"

- b. The teacher should add questions or subtopics of his own, making sure that key issues in a topic will be covered, and also that the questions will lead students to resources he knows are available.
 - c. The teacher may take care to raise questions from different disciplinary viewpoints. In order to prepare these questions, the teacher may consider the following: How has this topic been treated in the arts: in literature, drama, dance, and music? How do science and mathematics help us understand this topic? How has the topic been treated in philosophy? In history? What national significance does the topic have now? How does it affect people in this community right now? How does it affect the students in this class?
 - d. The teacher asks the students to help narrow the list of subtopics down to five or six equally weighty and interesting ones, combining some subtopics into new ones if necessary.
4. The teacher and the students identify a preliminary list of resources for learning more about each subtopic.
- a. The teacher tells the students about a range of possible sources of information about the subtopics, and pauses to give examples of each one:
 - The newspaper—Have there been stories in the news about a conflict somewhere in the world?
 - Community experts—Is there a friendly magistrate or police woman or representative from city government who is willing to be interviewed about his or her work resolving disagreements between people?
 - Works of fiction—Is there a book, play, poem, or collection of folk tales students can read that deals with ways conflicts are resolved?
 - Surveys—Can students survey a number of other students or adults about conflicts they have had, and the ways they have resolved them?
 - Other teachers—Can other teachers (of history or philosophy, perhaps) be interviewed or provide reading matter on famous cases of conflict resolution?

Internet—If access to the Internet should be a possibility, where can students go (to what facilities and to what online sites) to find information on their subtopic?

5. Committees are formed to plan the study of their subtopics.
 - a. Students assign themselves or are assigned to groups to re-search each subtopic. (Teachers use their judgment to form groups that will work well together.)
 - b. The members of the group may prepare a written proposal of the work they plan to do. The teacher posts questions on the wall to guide this step:

What questions will you answer in your report?

What resources will you use (books, interviews, surveys)?

What tasks will each person do?

What is your schedule for completing your work (proposal submitted, research completed, first draft of report, presentation of the report)?

What help will you need from the teacher or from others?

How will you ensure everyone participates?

Each proposal is presented to the teacher, who reviews it and makes suggestions for improvements.

6. The teacher conducts minilessons on the skills the students will need.
 - a. The teacher anticipates the skills of research, data processing, writing, and presentation that the students will need to employ, and also stays alert to other skills that become necessary along the way.
 - b. The teacher makes short, well-planned lessons to teach each skill. Ideas for such lessons can include the following:

using a library to find resources

etiquette and safety issues when arranging and carrying out an interview

note taking and transcription

what to do when sources disagree

conducting a survey

mathematics for tabulating survey results

graphing as a way of reporting data

writing outlines and first drafts of reports
revising reports to make them informative and clear
editing reports for correctness
making oral presentations
preparing visual aides to accompany presentations.

In a typical lesson, the teacher demonstrates and perhaps even role-plays the skill in question, and immediately asks the students to practice the skill themselves, if possible.

7. The students carry out their research within their committees.
 - a. Time is set aside in class or is arranged outside of school for the students to plan together and do their work.
 - b. The teacher may assign cooperative learning roles within the groups: questioner, note taker, time keeper, summarizer, reporter.
 - c. The teacher meets frequently with each group to ensure each person has a clear role and direction, that the work is going ahead on schedule, and that obstacles are being overcome.
 - d. The teacher arranges a time for each committee to make a preliminary presentation of their findings. The teacher may suggest further research at this stage.
 - e. Representatives from each group may meet in a *plenary committee* with the teacher in attendance, to make sure that the reports will fit together to give adequate coverage of the whole topic.
8. The committees make their presentations.
 - a. The presentations may be made in many media: oral reports, a magazine or class book, a poster discussion (each group displays a poster and uses it as a basis for their talk about their topic), a radio show (real or fictional), or a bill to be introduced in parliament (fictional).
 - b. The presentations may be made to different audiences. They may first present their findings to one another, but they also may share them with other classes in the school, or with adult citizens' groups. They may write them in book form and put the book in the school library. They may send them to a newspaper.
9. The class decides on follow-up actions.

The students follow the presentations with a discussion about what they should do next.

- a. There are probably thank-you letters to write, and there may be other actions they can take. For example, if the topic was *conflict resolution*, how can the class or the whole school incorporate the lessons they learned into their daily conduct? If the topic was *waves*, how can they send help to the victims of a typhoon they studied?
- b. They may decide what related topic they want to study. A study of *waves* might lead to a study of *the sea*. A study of *conflict resolution* may lead to a study of *ethnic group relations*.

10. The students' learning is evaluated.

Evaluation of a thematic unit usually focuses on three aspects: One focus is on the content the students learned, another concerns the skills and processes they used, and a third concerns the adequacy with which the topic expanded students' understanding of the topic under consideration.

- a. As a way to build accountability into the students' work, the teacher may tell the students from the outset that they will be expected to take a test on (or write an essay about) the most important knowledge that was generated by the study of the thematic unit. If this is done, the motivational dynamic is familiar from cooperative learning: Students must do a good job of presenting information to one another, because each student will be tested individually on what he or she learned. As a further variation, each committee may prepare a study sheet (or an "expert sheet") about their subtopic (the teacher may add questions, too) and distribute it to the other students to help them focus their attention as each presentation is made. Before the test is given, each committee may lead a review session of its expert sheet, following the Jigsaw method presented in Guidebook V.
- b. Students may be assessed on their use of the processes they used for research, writing, data processing, and reporting. In this they may follow the use of *rubrics* and *self-evaluations* as described later in this Guidebook.
- c. Students also may be asked to reflect on their experience with the thematic unit. The best vehicle for this reflection is *portfolio assessment*, as described later in this Guidebook. The portfolio might raise questions such as the following:

- What did you know about the topic before we started this unit? What do you know now?
- How can you demonstrate what you learned?
- How did the unit improve your ability to ask questions, find answers, report information, and share your knowledge with others?
- What evidence can you show that demonstrates your learning?
- What do you still need to know about this topic?
- What skills that you used do you still need to perfect?

Guided Practice in Lesson Planning

Now it is time for the participants to take a topic of their choice and prepare a lesson plan for it. It will be useful if they take turns in pairs helping each other design the lessons (the pairs might be assigned according to grade level or subject taught). When they are finished, they can present their lessons to those at their table, and some of the lessons can be shared with the whole group. If the group will not be dispersing soon after, it will be desirable for participants to post their lesson plans on the wall so that others may read them.

Remind the participants to take time with the motivation phase—especially to ask themselves what opportunities for critical thinking and active learning are presented in their lessons.

When they get to the step of naming prerequisites, they must ensure that the students will already know how to do the learning activities they are proposing (if not, they should plan a brief lesson to teach the strategy).

As they write objectives, have them take special care to specify the kinds of thinking they wish the students to do.

They should hold off on planning the evaluation strategies just yet: These will come later.

They should carefully choose activities from each of the three groups of evocation, realization of meaning, and reflection; and also design appropriate extension activities.

You also may wish to lead the participants through an exercise in planning a thematic unit. It can be interesting and enjoyable to have the whole group proceed as follows:

- First, they pick an age group for which they are planning;
- Next, they brainstorm a list of four or five topics;

Now they discuss the feasibility of each topic (Does it lend itself to interdisciplinary thematic study? Does it relate adequately to the curriculum? Will it really interest the students? Are there likely to be resources for it?).

Once they have chosen the best topic, remind them of the interdisciplinary questions found under the third step in planning a thematic unit. Using those questions to guide them, ask people to help you create a cluster showing the main topic and the subtopics. Have them next decide what the most productive five or six subtopics would be, combining some into new subtopics, if necessary.

Now have groups brainstorm the resources that could be used to study each subtopic. Refer to the categories of resources listed under step 4 earlier in this Part.

Demonstrate what is meant by a minilesson. For example, you might set up a role play showing people how to interview an informant, asking questions that are specific, that show an interest in that person, and that follow up things that are said and ask for details.

Brainstorm other skills that might need to be taught, then ask small groups to choose a different skill and plan a short (5-minute) minilesson on that skill.

Have the group brainstorm the different ways the students might present their findings, and have them brainstorm follow-up activities that might be done with this unit.

Before leaving this topic, ask the participants to think through with you ways that the thematic planning scheme presented in this chapter might either be expanded or simplified, or otherwise adapted to their different teaching situations.

PART III ASSESSMENT

Raising the Issue of Assessment

This section begins with a discussion of the issue of assessment. If the participants raised questions about assessment at the beginning of the session, recall these now. Otherwise, ask them to take a minute and write down answers to these questions:

What challenges have you faced in the area of assessing students' knowledge and strategies as you tried these methods?

What solutions did you find?

As you tried the methods, how did you decide that the students were learning?

What questions do you have about assessment?

Ask the participants to note any places in the following discussion where answers to their questions and solutions to their problems are shared. This section should begin with a general discussion of the purposes of assessment, both in traditional teaching, and in teaching for critical thinking.

Begin by asking participants to name the kinds of assessments they carry out, the audiences for those assessments, and the reasons why those audiences want them. If the point is not made already, you might suggest that there have always been many reasons why teachers assessed students' learning, and most have been related to the varied audiences for the results of those assessments. At one level, governments and ministries of education have demanded evidence that their investments and policies in education are making a difference. At another level, school directors have wanted proof that learning is occurring in their buildings. Parents have wanted to know that their children are achieving adequately. Teachers have sought to know how well their class as a whole and how individual students are faring. And students themselves have wanted the good news or bad news about the way their accomplishments compare to those of their classmates, so they can get a better idea of the future they might be headed for.

Traditionally, these audiences have been satisfied with testing that yielded quantifiable results. Students are tested on what they know. Their scores on these tests are considered satisfactory indicators of what they are learning.

As teachers begin to invite more active learning and critical thinking in their classrooms, however, they find that they must approach assess-

ment in new ways (and the participants will most likely agree). Teachers make the following observations:

- First, it is not so easy to test and measure what students know when teachers have students grapple with issues to which there is no one right answer.
- Second, when teachers place value on the students' activity of making meaning, what can be tested *after* the lesson becomes not as important as what happens *during* the lesson—during live acts of inquiry. Teachers need a way of seeing and appreciating the *processes* of the students thinking and learning, rather than to evaluate only the *products*.
- Third, teachers realize that if students are to take responsibility for their own learning—if they are to become life-long learners—students must become partners in the assessment process: they must take responsibility for understanding what they need to know and be able to do; they must clearly perceive their own accomplishments and needs for growth; and they must be able to formulate plans to do better.
- Fourth, however, these new concerns for assessment usually must coexist within the traditional culture of testing. That is, governments, school directors, parents, teachers, and students themselves will still want to know how the students rank among their peers. The new forms of assessment described in the following section have not fully replaced traditional tests.

Strategies for Assessment of Critical Thinking

We will now go through a set of strategies for assessment. *Note that it will be useful if the interpreter already has prepared a list of these strategies for you to post as this discussion goes forward.*

Rubrics

Perhaps the simplest way to make students partners in the assessment process is to make them conscious of what is meant by good work. That, in turn, is most simply accomplished by making explicit the criteria for marking. In classrooms that promote critical thinking, teachers

often are called on to assign marks to products and performances that are not merely factual (that is, they cannot simply count the number of questions students answered correctly to arrive at a mark). In such cases, a useful approach to assessment is the use of *rubrics*, explicit statements of what a work product must contain to merit a high mark, a medium mark, or a low mark. For example, suppose students have written an essay about the revolutions in France and Hungary in 1848, and the teacher intends to rate their papers between one and five. The teacher would prepare a set of rubrics such as those that follow:

Rubrics for Evaluating Essays

To merit a mark of “5,” an essay must

1. set out an original thesis (not merely repeating what was said in class).
2. support that thesis with a well-developed argument (some teachers would state a minimum number of reasons that must be listed in support of the thesis).
3. take into account the major counter-arguments to that thesis.
4. be developed with a clear introduction, body, and conclusion.
5. be written neatly and correctly.
6. reach five to seven pages in length.

To merit a mark of “4,” an essay must

1. set out an original thesis (not merely repeating what was said in class).
2. support that thesis with a well-developed argument (perhaps requiring fewer reasons than the “5” essay)
3. be developed with a clear introduction, body, and conclusion.
4. be written neatly and correctly.
5. reach five to seven pages in length.

To merit a mark of “3,” an essay must

1. set out a clear thesis.
2. support that thesis with reasons.
3. be developed with a clear introduction, body, and conclusion.
4. be written neatly and correctly.
5. reach four to five pages in length.

To merit a mark of “2” or “1” an essay must

1. lack a clear thesis statement.
2. not provide reasons that support a clear thesis.

3. lack development in terms of an introduction, body, and conclusion.
4. lack neatness or contain errors of grammar and spelling.
5. be shorter than three pages in length.

Rubrics such as these are written on poster paper for display in the classroom, and are discussed with the students. Students are encouraged to pick a mark to strive for, and incorporate the listed qualities into their papers. Students may be invited to assess their own papers in terms of these rubrics before handing them in. Finally, the teacher marks the essay according to the rubrics shared in advance.

In order to further teach the students what is meant by quality essays, later, with the students' permission, the teacher may display examples of papers that rated 4s and 5s. Alternatively, in order to protect identities, the teacher may draft an original paper that combines the best features of several of the students' papers, and display that version to the class as an example of an excellent essay.

A final note: Care must be taken not to specify so rigidly what is expected of a good paper that no room is left for the students' originality. Some teachers add another criterion such as "punch" to refer to the unpredictable quality that accounts for the paper's impact on the reader. Punch might be achieved in many different ways: an exciting word choice, a telling analogy, a strong authorial voice, or a surprising conclusion. It cannot be predicted, but it ought to be acknowledged when it happens. In some cases, a paper's punch may rescue it from being a "2" or a "3" and propel its mark higher.

Self-Evaluations

Many teachers feel that it would be inappropriate to mark a student's participation in an active discussion. Making this point, Nancie Atwell (1987) notes that when she conducts a classroom discussion of literature, she is hoping to recreate the atmosphere that happens around her own dining-room table when intelligent friends are enjoyably discussing interesting topics. Though some contributions may turn out to be more forceful and interesting than others, the assembled friends certainly do not evaluate one another's ideas. On the contrary: friends often help one another flesh out an idea that is struggling for expression, and feel most successful when an interesting insight results from the group's efforts.

Nonetheless, teachers want to help students become more capable discussants. Providing self-assessments can help in this effort.

Consider a predictive discussion. To encourage students to participate well in this activity, the teacher can design a self-assessment such as the following:

Self-Assessment for Using the Directed Reading-Thinking Activity

	Always	Sometimes	Never
1. I make predictions based on the title and the illustrations.			
2. I guess what will happen based on the genre or type of story we are reading.			
3. I read with my predictions in mind.			
4. I pay attention to details that can help me make new predictions.			
5. When I'm doing other reading, I still stop and ask myself what I know already, and what I think will happen.			

The students fill out this self-assessment and discuss their answers as a group with the teacher. In this way, the teacher can help the students become aware of their own learning processes, and find ways to make better use of the classroom activities to advance their learning.

Self-assessments can be designed for other learning tasks, too.

Group Self-Monitoring

When students are working in groups, teachers often devote time at the end of an activity for the group to reflect on and assess its own functioning. They can be guided to do this if the teacher gives them statements to look at, such as the following.

Group Self-Assessment for Discussions

Almost always Sometimes Never

We make sure we understand the task before proceeding.

We stay on the assigned task.

Everybody contributes comments.

People listen to the other person before answering.

We allow several ideas to come forth before reaching a conclusion.

We sum up our position at the end.

Someone takes good notes of our discussion.

Point out that after the groups of students assess their own functioning in this way, they may confer with the teacher on ways to improve their group's workings.

Work Sampling

As another way to collect evidence that students are learning to participate adequately in critical-thinking activities, the teacher can request that students submit samples of their work that demonstrate that they are adequately using a strategy of learning or thinking. For example, as evidence that the students were adequately using the predictive reading strategy, the teacher might ask students to submit copies of the DRTA chart, the personalized written version of the Directed Reading-Thinking activity. As evidence that they were using the K-W-L strategy effectively, students can submit personalized K-W-L charts; and as evidence that they are using the INSERT strategy, students can submit their INSERT charts. Work samples to show that students are participating intelligently in shared inquiry discussions might be their own written answers to the questions put to them by the teacher.

With a little imagination, teachers (and students) can think of pieces of evidence (or artifacts) that demonstrate the extent to which students

are able to use a host of learning and thinking processes. When all else fails, the students' 10-minute essays or free writes written at the conclusion of a discussion or a debate may serve as evidence of the quality of their participation.

Portfolio Assessment

A more elaborate version of work sampling is the strategy of portfolio assessment. This is a rewarding activity for all concerned, although it exacts more effort than other forms of assessment.

Portfolio assessment usually begins with the teacher making explicit, at the beginning of the marking period, what the learning objectives are for that marking period. The teacher should list *content objectives* (course-related knowledge and abilities) and *process objectives* (general learning skills, such as reference skills, writing ability, and the ability to work productively in a group).

Each student is given a portfolio or some other storage device in which to place papers and other work samples he or she creates during the marking period. The teacher and the students agree on (or the teacher lists) the kinds of artifacts that will count as evidence that students have met the learning objectives. The artifacts might include essays, self-assessments, written reflections on work samples, and tests (most teachers remind the students almost daily to put samples in their portfolios that will remind them later of the work they have been doing).

Toward the end of the marking period, the students are invited to select their best works from samples that they have been keeping in their portfolios. The students are then asked to write an essay in which they reflect on what they have learned in that marking period, and in what ways the work samples or artifacts they have chosen illustrate that learning has occurred. If possible, they should relate their comments to the learning goals for the marking period. The students may refer to any rubrics the teacher has distributed during the marking period to support their arguments that they have grown and improved. The students may be asked to estimate the mark they deserve.

The selected work samples and the related essay are now collected in a portfolio and given to the teacher. The teacher reviews the portfolio. Having read the portfolio in advance, many teachers now conduct an interview with each student, in which they review together the work the student has submitted and the student's written reflections on that

work, celebrate with the student those things the student has done well, help the student focus attention on those things he or she would like to improve on, and help the student formulate specific goals for improvement, as well as discuss practical means for meeting those goals. The teacher now assigns a mark for the work—taking into account the mark the student had assigned for himself or herself, and making clear the basis for the mark that the teacher actually assigns. The portfolio also may be discussed in a meeting with the student’s parents, making clear to them not only how well the student is doing, but specifically *what* work he or she is doing in the class.

Even if the entire portfolio process is not used, there are aspects of it that can encourage self-directed learning. Students become self-reflective when they are asked to choose individual work samples from many possible samples, and to justify their choices. The same is true when they are asked to write an essay about what they have learned, to calculate an estimated mark for themselves, to list their achievements, to set goals for themselves, and to discuss with the teacher practical plans to meet those goals.

Note to the presenter: It will help in this discussion of portfolio assessment if you will bring along one or more sample portfolios for the participants to look over.

Guided Practice in Assessment

Now ask the participants to return to the lesson plans they wrote earlier and to design an assessment strategy for them. Note the following points:

1. They may combine the assessment techniques introduced here with other kinds of assessments for mastery of the content.
2. They should strive to design at least one questionnaire to assess students’ use of a learning or thinking strategy.
3. They also should design either a set of marking rubrics, or a plan for work sampling.

Again, we recommend that participants work in pairs to plan their assessments. Then they can share their plans at their tables and finally with the whole group. If time permits, they should post their plans around the room for others to study and comment on.

Planning for Implementation

At the end of the workshop, the participants should formulate explicit plans to use aspects of the lesson-planning ideas presented here, and also use one or more of the assessment strategies. The plans should include the class they have in mind, the subject matter, and the times they will try it. Be sure to remind them that any successful implementation will require that they try the technique at least three or four times before they can expect success with it. They also should make plans to meet with their interim groups, and report to their colleagues on what they tried and how it worked.

GLOSSARY

<i>Academic discipline</i>	a subject of academic study and research.
<i>Active learning</i>	learning that is driven by the students' curiosity and acts of inquiry.
<i>Assessment</i>	the measure of the processes and attainment of students' learning.
<i>Cooperative learning</i>	group-based instruction that usually has individual accountability.
<i>Extension activity</i>	following a lesson or unit of study, an activity that extends the ideas into further study of real-life applications.
<i>Higher order thinking</i>	thinking that stresses analysis, comparison, interpretation, application, debate, innovation, problem solving, or evaluation of a line of thinking.
<i>Objective</i>	a specific, usually observable and measurable, desired outcome of a lesson.
<i>Portfolio assessment</i>	an approach to authentic assessment in which students collect writings and other artifacts that demonstrate their learning of a subject during a fixed period, and are asked to reflect on their own learning.
<i>Prerequisite</i>	a concept or skill that a student must have before further learning is likely to be successful.
<i>Rubrics</i>	criteria on which a grade is based, and which are communicated explicitly to the students.
<i>Thematic unit</i>	a unit of instruction that approaches a topic from several disciplinary perspectives.

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