Becoming a Reflective Teacher

An empowered teacher is a reflective decision maker who finds joy in learning and in investigating the teaching/learning process—one who views learning as construction and teaching as a facilitating process to enhance and enrich development.

—Fosnot (1989, p. xi)

Chapter Objectives

The facilitator will

- Differentiate among the technical, contextual, and dialectical modes of reflective thinking
- Recognize and be able to describe the cyclical process of reflective thinking
- Be provided with tasks to help practitioners use the reflective thinking process
- Be provided with tasks assisting in the recognition of characteristics of practitioners functioning in each of the three reflective thinking modes
- Support preparation of a plan for continued growth in reflective thinking

R eflective thinking is the process of making informed and logical decisions on educational matters, then assessing the consequences of those decisions. Campbell-Jones and Campbell-Jones (2002) describe reflection as an "inner

dialogue with oneself whereby a person calls forth experiences, beliefs, and perceptions" (p. 134). Risko, Roskos, and Vukelich (2002) continue the process explanation by adding that the dialogue should both inform and transform knowledge and action. Scholars of reflective thinking have categorized it according to the mode of thinking or the process an individual progresses through to reach a level of reflection that complements both the context of the situation and the background the individual brings to the episode. This chapter will assist the facilitator with background knowledge for discussing both the modes and process of reflective thinking, tasks to use with practitioners desiring to enhance reflective thinking ability, and a format to aid practitioners in preparation of a plan for continued growth in reflective thinking.

MODES OF REFLECTIVE THINKING

One way of manifesting the characteristics of reflective thinking is through modes of delivery. Scholars differ on the hierarchical nature of reflective thinking but generally agree on three modes or levels: technical, contextual, and dialectical. The Reflective Thinking Pyramid (see Figure 1.1) provides an example of the three levels.

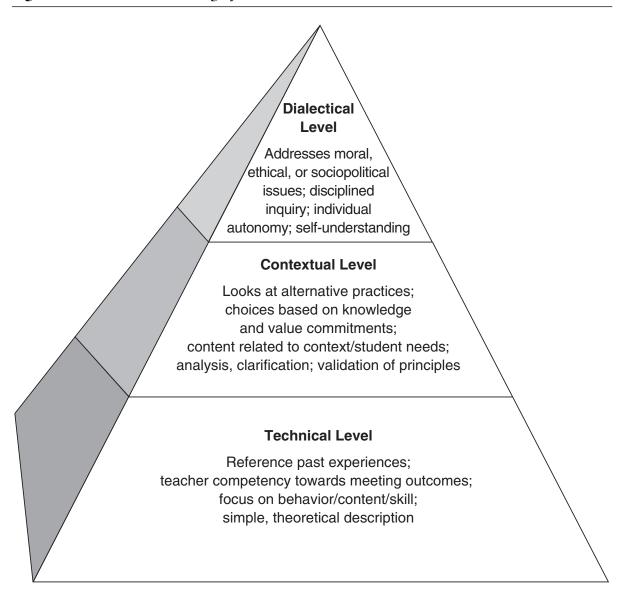
Technical

Van Manen (1977) refers to the initial level of reflective thinking as *technical rationality*. Van Manen serves as a model for Lasley (1992) and Grimmett, MacKinnon, Erickson, and Riecken (1990) in that the first level of reflection deals with methodological problems and theory development to achieve objectives. Valli (1990, 1997) also refers to the first level as technical rationality but differs by positing that technical rationality is a nonreflective level. Valli's second level, practical decision making, adds reflection to the technical aspects of teaching. Collier (1999) simply categorizes technical reflection as reaction.

Practitioners reflecting at the technical level function with minimal schemata from which to draw when dealing with problems. Getting through lessons and using instructional management approaches are short-term measures that may be reflected on in terms of meeting outcomes. The individual, often isolated, episodes are building blocks for developing the professional repertoire needed to reflectively handle nonroutine problems. Many novice teachers are thought to function at a technical level based on a lack of schemata in dealing with educative problems.

Outcomes for practitioners reflecting at a technical level may involve appropriate selection and implementation of lessons to achieve objectives. The objectives are not problematic nor does the practitioner deliberate on the context of the situation. Acquisition of skills and technical knowledge is important, as are methodological awareness and ability to implement a preset lesson. Technical practitioners may be transitioning into linking theory development to practice and identification of the relevancy of activities and objectives. Practitioners need to be making observations and processing information to move toward solving problems and testing possible solutions for decision validity.

Figure 1.1 Reflective Thinking Pyramid



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Facilitators working with practitioners functioning at a technical level should provide genuine, continuous experiences; observational learning instruction; and thoughtful discussion of problems and possible solutions. Experimentation and application of solutions with clear explanations and meaningful activities are also important. Sessions should provide necessary pedagogy, content, and theory, and then foster use, examination, and analysis of instructional and management approaches. Knowledge of student characteristics will also be helpful to the technical practitioner in being able to reflect on problems faced in a field placement.

Contextual

A second level of reflection (Collier, 1999; Grimmett et al., 1990; Lasley, 1992; Van Manen, 1977) involves reflections regarding clarification of and elaboration on underlying assumptions and predispositions of classroom practice as well as consequences of strategies used. The contextual mode deals with pedagogical matters as examined relative to a relationship between theory and practice. The nonproblematic nature of the technical level gives way to problems at the contextual level. Problems stem from personal biases resulting from a practitioner's belief system, looking at situations in context, and questioning of practices based on increased pedagogical knowledge and skills. Problems at the contextual level cause practitioners to reflect on the contextual situation, which often leads to better teaching.

An outcome for practitioners reflecting at this level may be understanding concepts, contexts, and theoretical bases for classroom practices, then defending those practices and articulating their relevance to student growth. Self-reflection to interpret and inform practice and establish congruency between theory and practice would be indicative of functioning at a contextual level. Clarification of assumptions and predispositions of practice and consequences helps contextual practitioners assess implications and consequences of actions and beliefs. Through increased practice and theoretical knowledge, practitioners examine competing views relative to consequences and actions, and then begin to develop routines and "rules of thumb." Understanding personal and environmental interactions is also a desired outcome for practitioners functioning at a contextual level.

Facilitators working with practitioners functioning at a contextual level should provide knowledge of situational constraints and external agents that may affect effective teaching. Time for collegial support, input, and discussion should be incorporated into sessions to provide bridges between and among concepts, theories, and practices. Questioning should be used to foster reflection with positive and timely feedback being provided.

Dialectical

Van Manen's (1977) third and highest level of reflectivity, *critical reflectivity*, deals with the questioning of moral and ethical issues related directly and indirectly to teaching practices. Critical reflectivity is comparable to the dialectical level of Grimmett et al. (1990) and Lasley (1992). At this level, practitioners contemplate ethical and political concerns relative to instructional planning

and implementation. Equality, emancipation, caring, and justice are assessed in regard to curriculum planning. Practitioners are concerned with worth of knowledge and social circumstances useful to students without personal bias. The ability to make defensible choices and view an event with open-mindedness is also indicative of reflecting at a dialectical level. Collier (1999) viewed this highest level of reflection as contemplative.

Outcomes for practitioners functioning at the dialectical level relate to looking for and analyzing knowledge systems and theories in context and in relation to one another. Outcomes dealing with critical examination of underlying assumptions, norms, and rules; practicing introspection, open-mindedness, and intellectual responsibility (Dewey, 1933); and questioning moral and ethical issues of teaching, instructional planning, and implementation are all a part of higher aspects of reflection found at the dialectical level.

Concern with worth of knowledge and social consequence should be explored as well as defense of choices using external and internal dialogue. Classroom implications should be extended to society while reflecting on opposing viewpoints and cross-examining issues and practices. Risk taking on the part of the dialectical practitioner in the form of peer review and selfassessment independent of external standards or conditions will help the practitioner at this level achieve self-efficacy and self-actualization. Practitioners are developing expert knowledge and the ability to reconstruct action situations as a means for reviewing the self as teacher, and questioning assumptions previously taken for granted. Examination of contradictions and systematic attempts to resolve issues are probable outcomes.

Facilitators working with practitioners functioning at a dialectical level should provide a forum to assist them in deciding worthiness of actions and analyzing curriculum approaches, case studies, conventional wisdom, and technocratic approaches. Sessions should enable practitioners to look at issues in terms of optimum benefit for students and teacher empowerment. Action research should also be an outcome of reflective thinking at the dialectical level. Other activities may be analyzing stereotypes and biases through narratives and storytelling, practicing affective elements of caring and concern, and reflecting on the role of school climate and on society's role in education.

THE PROCESS APPROACH

Dewey (1933), Eby and Kujawa (1994), Pugach and Johnson (1990), and Schön (1983) delineate a cyclical process approach to reflective thinking. Figure 1.2 illustrates the reflective thinking process. In each instance, the first step to reflective thinking involves a problem. Dewey refers to such a problem as a felt difficulty. Schön uses the term problematic situation to identify the initial step of reflection in action.

A second step in the process is to step back from the problem to look at the situation from a third-person perspective so that the problem may be framed or reframed (Clarke, 1995; Pugach & Johnson, 1990; Schön, 1987). Dewey (1933) refers to the stage in which the problem is understood as one of providing location and definition. Eby and Kujawa (1994) dissect the process using

components of observation, reflection, data gathering, and consideration of moral principles. These features provide the mental picture of the thought processes entertained by the reflective practitioner in an attempt to define a problem. Also represented at the definition stage are the parallel features of context and schema. The episode is likened to past events in an attempt to make sense of the problem and to search for possible solutions in the reflective thinker's repertoire. Once the reflective practitioner has searched for routine solutions to a possibly nonroutine situation or has devised possible solutions based on reasoning through similar past experiences, predictions are made and possible solutions generated. The solutions are systematically tested with subsequent observation and further experimentation, if needed, and judgments are made relative to the level of success of the intervention. Dewey likened the process to the scientific method.

Evaluation, the next stage in the process, consists of a review of the implementation process and the consequences of the solution. Acceptance or rejection of the solution takes place. If the solution proves successful, the instance may be stored for subsequent retrieval in similar situations or may become routine (Dewey, 1933). If the solution is not successful, the problem may be reframed and the process repeated.

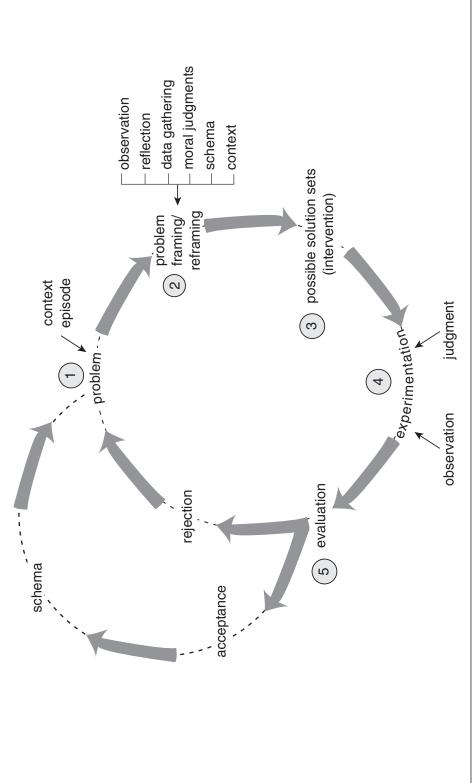
TECHNIQUES FOR FACILITATING REFLECTIVE ACTIVITIES

A constructivist approach is used in this guide. Piaget (1975) was a proponent of the constructivist view of learning, which advocates learning as a process of change. Through simultaneous processes of assimilation and accommodation, new information is added to an existing repertoire of knowledge. Assimilation is a process by which knowledge is restructured so it can be integrated into an existing schema. Accommodation is the process that allows practitioners to restructure knowledge by making modifications to existing schemata. When knowledge is constructed that correlates to an existing schema, balance or equilibrium occurs.

Two basic principles of constructivism are (a) what a person knows is actively assembled by the learner (Brooks & Brooks, 1993) and (b) learning serves an adaptive function of storage of useful information. The following learning experiences are appropriate for a constructivist program:

- Emphasis on learning as reflective thinking and productivity: A fundamental goal should be the ability to perform relevant tasks in a variety of effective ways
- Context-rich learning: Learning should focus on authentic activities, allow for student collaboration in exploring and evaluating ideas, and provide learning experiences that foster communication and access to real-world examples
- Access to models of the skills appropriate to the learning situation, ideally in an apprenticeship relationship

Figure 1.2 Reflective Thinking Model



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A constructivist (see Table 1.1), then, is a practitioner who

- Believes all knowledge is constructed or invented by the learner
- Involves learners in active manipulations of meanings, numbers, and patterns
- Believes learning is nonlinear
- Provides students with the tools of empowerment: concepts, heuristic procedures, self-motivation, and reflection
- Believes learning occurs most effectively through guided discovery, meaningful application, and problem solving

By adhering to such an ideal, the facilitator subscribes to the purpose of this guide, a purpose that fosters change; allows learners to progress at a pace indicative of experience, knowledge, and interest; and supports growth in reflective thinking.

The purpose of the book is also supported by existing andragogical knowledge. *Andragogy*, the teaching of adults, is based on several assumptions about adult learners (Knowles, 1990):

- The need to know is strong in adult learners. Benefits, consequences, and risks must be ascertained prior to involvement in the learning situation.
- Self-concept and intellectual responsibility of adult learners lend credence to self-directed learning situations.
- Experiential learning built on the adult learner's past experiences is essential. Group discussion, simulations, and problem-solving activities emphasizing peer collaboration have proven effective with adult learners.
- Readiness to learn is inherent in adult learners.
- Connections to real-life situations and examination of relevancy issues motivate adult learners.
- Adult learners are often intrinsically motivated.

Responsibilities within the facilitative role of the staff developer or teacher educator that augment the andragogical model involve such tasks as presenting the relevance of ideas and concepts, allowing self-directed peer activities and the facilitation of discussion regarding those activities, and using knowledge of previous experiences or examination of an existing schema on which to build current experiences. For these reasons, this guide has been constructed in a nonlinear fashion. A variety of activities for each topic and at each reflective thinking level has been created. Activities are often self-directed peer activities that allow the practitioners to construct their own knowledge, thus supporting intrinsic motivation and relevancy.

Certain techniques for facilitating learning have been supported by research and are used throughout the guide. What follows is a brief description of each technique to aid facilitators in role clarification.

Table 1.1 Defining a Constructivist

Δ	Constructivist	
\mathcal{A}	LANGIRIICI WISI	

• Believes all knowledge is constructed or invented by the learner

• Involves learners in active manipulations of meanings, numbers, and patterns

• Believes learning is nonlinear

• Provides students with tools of empowerment: concepts, heuristic procedures, self-motivation, and reflection

• Believes learning occurs most effectively through guided discovery, meaningful application, and problem solving

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Thinking Aloud

Practitioners learn reflection through the modeling of their mentors. Deliberate and systematic reflection that is visible or audible to practitioners promotes teaching by the very example it sets. Practitioners see reflection when there is a pause in teaching to consider a remark or through the care and effort of a mentor to put observations into verbal thought.

Discussions

Classroom discussion is a basic teaching tool. *Classroom discussion* is defined in this guide as practitioners creating understanding by exchanging information, opinions, or experiences while working toward a common goal. The facilitator observes and encourages the group's efforts without becoming directly involved. Discussions may take place face-to-face or through technological formats in a synchronous or asynchronous mode.

Grouping Practices

Grouping of practitioners will vary within the context of the activity objective. Whole-group discussion may be held as well as small-team activities. Individuals will at times prepare a preliminary list of ideas for later discussion within a small team or whole group. Small—team numbers will vary depending on the activity and are generally stated under the procedure section of the activity. Also found in this section are designated ways of sectioning teams and possible ways of determining team roles. Means for determining teams and roles should be considered as suggestions, because factors, such as group numbers and room logistics will affect partitioning of groups by the facilitator.

The facilitator's role within the group is to provide necessary background and directions, establish ground rules, present the assignment, and facilitate the work of the group in meeting the activity objective. Facilitation of an activity involves allowing practitioners to assume responsibility for the group's success. Facilitators should not interject their own ideas, opinions, or information. While practitioners are working in groups, facilitators should move quietly about the room, monitoring but not interrupting. Show by your presence that you are supportive, attentive, and available. Encourage groups having difficulty by suggesting ways of problem solving rather than suggesting solutions.

Cooperative Learning

Cooperative learning is used widely today at all levels of education (Aronson, Blaney, Stephan, Sikes, & Snapp, 1978; Johnson, Johnson, & Holubec, 1991; Slavin, 1983). It is particularly effective for adult learners. Cooperative learning benefits learners by

- Increasing achievement through collaboration
- Improving relations among diverse learners (gender, age, culture, ethnicity)
- Developing problem-solving skills
- Fostering democratic processes in learning

Practitioners cooperate to complete the learning task. Cooperative learning tasks are set up in a manner where each participant has a role that must be adhered to if the task is to be completed. One example of cooperative learning tasks used in this guide is Task 12 (see Chapter 3), which uses the *jigsaw* technique (Aronson et al., 1978).

As the facilitator, your position is to promote group learning. The facilitator establishes purpose and rules, provides interesting and meaningful tasks, provides direction, and monitors group interaction. Assessment of task completion is necessary both from an academic standpoint and from a social standpoint. Not only must the task be completed well, but all members of the group must cooperate in its completion. Facilitators relate the value of working cooperatively to the practitioners.

Practitioners are expected to be self-directed and apply leadership techniques with the purpose of completing a task in a collaborative setting. They are responsible for the success of the team. Practitioners should be active, accountable, cooperative, and caring. Peer feedback and self-evaluation are important aspects of cooperative learning.

While monitoring cooperative groups, a facilitator needs to be mobile and observant. Groups are monitored for both academic and social success. If intervention is needed within a team, enter the team at eye level, which promotes a sense of equality rather than superiority on the facilitator's part. Provide questioning that prompts the group to return to the task with the least amount of interference.

Brainstorming

Brainstorming will often be used during task discussions in this guide. A set time limit will be used, with practitioners expressing all the ideas on a given topic within time constraints. All answers are acceptable, the goal being quantity of ideas, uninhibited participation, and uncritical acceptance by team members. A recorder should be chosen prior to the brainstorming activity to write down the ideas of all other members. Questions used in brainstorming are generally literal and open-ended. Guidelines for brainstorming (see Table 1.2) are

- Preset time constraints
- Equality and democracy
- All ideas acceptable; be creative
- Volume of ideas important
- No discussion of ideas
- Risk-free environment
- Designated recorder

Consensus Building

Consensus building is a logical follow-up activity to brainstorming. After ideas have been generated, discussion is often necessary to decide what ideas best fit the current situation or question. The cardinal rule is that the solution must be acceptable to all team members. The following are consensus guidelines (Harrington-Macklin, 1994; see Table 1.3):

- Topic or idea is placed before the team for discussion.
- Topic is discussed, questions and concerns are raised, data and solution options are presented.
- Team decides whether to try to achieve consensus, how long it will spend, and what it will do if consensus cannot be reached.
- Differences and disagreements, as well as similarities, are explored and encouraged.
- Suggestions and modifications to the original topic are made.
- A new idea is created by the team on the basis of discussion.
- Facilitator checks for consensus.
- If no consensus, facilitator asks for a variation of the idea and tests for consensus again.
- If no consensus can be reached, facilitator suggests stand-aside proposals (trial time period, modified plan).
- Facilitator tests for consensus for stand-aside proposal.

Buzz Groups

Buzz groups are informal, loosely structured, and small. They are used to break down larger groups into smaller teams, which makes interaction of members less cumbersome. Buzz groups are generally practitioner run. Each team briefly addresses the problem at hand, records ideas, selects a designated reporter, then brings the team's ideas back to the whole group for presentation.

Role-Playing

Role-playing activities can help to improve understanding by allowing practitioners to think about and discuss the role of the speaker or writer, audience, or subject matter within a problem. The technique helps the facilitator gain insight into the feelings of the practitioners and helps discover what is important to them. Practitioners may be chosen or elect to participate in a particular role. The scenario is set by the facilitator, but the dialogue should be developed spontaneously. Discretion must be used to avoid embarrassment and discomfort.

Questioning

Effective questioning serves to meet several goals (Heathcote, 1980). Through effective questioning, the facilitator may

- Bring focus to an activity
- Cause group members to reflect on alternatives not otherwise discussed
- Promote identification of issues in more depth
- Control the direction or mood of the practitioners
- Promote beliefs and values clarification
- Deepen insight of practitioners

Table 1.2 Guidelines for Brainstorming

- Preset time constraints
- Equality and democracy
- All ideas acceptable; be creative
- Volume of ideas important
- No discussion of ideas
- Risk-free environment
- Designated recorder

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Table 1.3 Consensus Guidelines

- Topic or idea is placed before the team for discussion.
- Topic is discussed, questions and concerns raised, and data and solution options presented.
- Team decides whether to achieve consensus, the length of time to spend, and what to do if consensus cannot be reached.
- Differences and disagreements, as well as similarities, are explored and encouraged.
- Suggestions and modifications are made to original topic.
- Discussion by the team follows to create a new idea.
- Facilitator checks for consensus.
- If no consensus, facilitator asks for a variation of the idea and tests for consensus again.
- If no consensus, facilitator suggests stand–aside proposals.
- Facilitator tests for consensus for stand-aside proposal.

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Heathcote (1980) also suggests several guidelines for questioning: Effective questions asked by practitioners must be real; help practitioners focus on where they are, what they are doing, and why they are doing it; lead practitioners to wonder about and seek out new information; and move practitioners to reflect on

There are many kinds of effective questions. Among them are

Information-seeking questions

the significance of actions.

- Questions that encourage research
- Questions that supply information
- Questions that require group decision making
- Class-controlling questions
- Questions that establish mood and feeling
- · Questions that foster beliefs and values
- Questions that foster insight

ACTIVITIES FOR INTRODUCING REFLECTIVE THINKING TO PRACTITIONERS

The following activities will assist the facilitator of reflective practitioners with introducing reflective thinking. Activities involve formulating a definition of reflective thinking and using the reflective thinking model to enhance reflective thinking on the part of practitioners. By analyzing the model and illustrating the use of the process, practitioners should correlate the benefits of being reflective with problems in their own lives.

The first meeting with practitioners should be for the purpose of reviewing the model, as it is the central element of most of the tasks in this chapter. Activities are set up to facilitate ease of use. A topic and objective are provided along with a materials list and time constraints. The procedure for each task is systematically simple. Little preparation is needed after material gathering and reading for background knowledge has been completed. A description of several techniques used in the procedure section of each activity is found on previous pages in this chapter. Evaluations support the task objective. Debriefing questions are questions that should promote reflective thinking of practitioners at the conclusion of the activity, generally in a whole-group situation.

Task 1 **Finding a Definition**

Topic: **Defining Reflective Thinking**

Objective: Participants will devise and revise a definition for reflective thinking by

writing an initial definition, sharing it first with a colleague, then with

the group, and finally reaching a consensus on one definition.

Materials: Chart paper or newsprint; masking tape; Post-it notes; Prominent

Reflective Thinking Definitions (Table 1.4); Consensus Guidelines

(Table 1.3)

Time: 30 minutes

Procedure: 1. Inform practitioners that to assess growth in reflective thinking, it is necessary to reach consensus on a definition. Distribute and review Consensus Guidelines.

> 2. Invite practitioners to write individual definitions of reflective thinking. Allow approximately 5 minutes.

- 3. Pair practitioners by allowing them to choose a peer with whom they have a high comfort level. Between the two, consensus must be reached and a second definition written on chart paper. Each pair should have the second definition written and displayed in a visible location and be prepared to discuss within 5 minutes.
- 4. Distribute one Post-it note to each practitioner. Instruct practitioners to vote by placing their Post-it note on the definition that most reflects their own thinking.
- 5. Discuss as a whole group why the majority definition was selected.
- 6. Distribute Prominent Reflective Thinking Definitions to practitioners. Compare the group definition with researched definitions.

Evaluation: Participants' definition had three commonalities found in most expert definitions: methodical process, inquiry orientation, and change or selfimprovement as a goal.

Debriefing: 1. Was the individual definition easy to write? What made it easy? Difficult?

- 2. How were the paired partners able to reach consensus on a definition?
- 3. For what reason did you vote for a particular definition?
- 4. Why is it important to create a definition indicative of the practitioner?
- 5. How did the group's definition compare to the experts' definitions?
- 6. Were there commonalities among all definitions?

Table 1.4 Prominent Reflective Thinking Definitions

Bigge and Shermis (1992)	Reflective learning is problem raising and problem solving. Fact-gathering is combined with deductive processes to construct, elaborate and test hypothesis.
Brubacher, Case, and Reagan (1994, p. 36)	[Reflective thinking is] our attempts to understand and make sense of the world.
Dewey (1933, p. 9)	[Reflective thinking is] active, persistent, and careful consideration of a belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends.
Lasley (1992, p. 24)	Reflection refers to the capacity of a teacher to think creatively, imaginatively and at times, self-critically about classroom practice.
Norton (1994, p. 139)	[Reflective thinking is] a disciplined inquiry into the motives, methods, materials and consequences of educational practice. It enables practitioners to thoughtfully examine conditions and attitudes which impede or enhance student achievement.
Ross (1989, p. 22)	[Reflective thinking is] a way of thinking about educational matters that involves the ability to make rational choices and to assume responsibility for those choices.
Ross and Hannay (1986)	[Reflective thinking is] a process involving decision-making in a socio-political context, identification of problems, a search for satisfactory answers, and investigation of social problems realized in living.
Schön (1983, p. 151)	It [the cycle of inquiry] is initiated by the perception of something troubling or promising, and it is determined by the production of changes one finds on the whole satisfactory or by the discovery of new features which give the situation new meaning and change the nature of questions to be explored. Tess. All rights reserved. Reprinted from <i>Promoting Reflective</i>

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Task 2 The Reflective Thinking Process

Topic: The Reflective Thinking Model

Objective: The practitioner will review the Reflective Thinking Model, then present a scenario showing the components of the model through role-playing.

Materials: Overhead transparency of Reflective Thinking Model (Figure 1.2); "Can't

Sit Still" Scenario (Table 1.5), one copy for each participant—write or type on the bottom of each copy one of the following so that there is an even distribution of each: "Twinkle, Twinkle Little Star" "Row, Row, Row Your Boat" "Mary Had a Little Lamb" "Itsy, Bitsy Spider" "Old MacDonald"

Time: 1 hour

Procedure: 1. Present the model of reflective thinking to practitioners by using the Reflective Thinking Model. Discuss the cyclical nature of the model using the background information presented earlier in this chapter.

2. Distribute "Can't Sit Still" scenarios to practitioners. Have them read the scenarios silently. Discuss the facts within the scenario as they relate to the reflective thinking model.

Problem: Danny's excessive movement
Frame-reframe: Arthritis causes need for movement

Possible solution

sets or intervention: Cardboard office
Experimentation: Use of cardboard office

Evaluation: To be decided Acceptance or rejection: To be decided

- 3. Group participants into five teams by referring them to the bottom of the scenario sheets, where you have written one of the earliermentioned children's song titles. Practitioners are to hum the tune of the song assigned to each of them as they navigate about the room listening for others humming the same tune. The last individual to enter the team is the leader.
- 4. Practitioners are to create a brief scenario to role-play for the whole group that depicts the reflective thinking model. Review role-playing rules. Allow 15 minutes for preparation.
- 5. Each team will present its role-play to the whole group. Immediately after each presentation, hold a brief discussion of the model components relative to the role-playing scenario. The overhead transparency of the model may be helpful in discussing the components.

Evaluation: Scenarios used in role-play reflected components of the reflective thinking model.

Debriefing: 1. Does the model fully represent the process of reflective thinking?

- 2. Is one component more important than another?
- 3. Can you think of other scenarios that follow the reflective thinking model? Explain.
- 4. How might this model relate to journaling situations?

TEACHER

Table 1.5"Can't Sit Still" Scenario

For the fourth time that morning, Danny had to be told to return to his seat, and once again, he returned to what he had been doing within a few minutes. His morning was spent dancing with the full-sized skeleton, looking out the window, picking on other students, and lying on the floor or his desk. "If I have to warn you again," said the teacher," you will visit the principal to discuss your problem!"

"But I wasn't doing anything!" Danny shouted, as he threw his pencil into the air.

"Write your name in the book," demanded the teacher.

Danny had been having problems all year. Because Danny has arthritis, he has two desks, which allows him to move from desk to desk whenever he feels the need. The problem is that he takes this privilege too far.

Danny has never been tested for a learning disability. He does attend a special reading class once a day. The remainder of his day is spent in the regular classroom.

"Today, we are going to try something different," the teacher said, as she walked to the back of the room. "I have an office that I want you to try." She set a large cardboard partition on Danny's desk. "Let's see if this helps you stay on task," she added.

Danny's mother is aware of Danny's problems at school. She visits with the teacher at least once a week. Danny also is required to take home daily assignment sheets. If there is a stamp on the sheet, Danny had a good day. Danny has a deal with his mother. If he brings home a certain number of good slips, she will take him to a basketball game.

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Task 3 Gardening Puzzle

Topic: Introduction of the Reflective Thinking Model

Objective: The practitioner will use the Reflective Thinking Model to devise a plan for partitioning a garden plot equitably among four individuals.

Materials: Reflective Thinking Model (Figure 1.2); copies of the Garden Plot Problem (Figure 1.3); Garden Plot Solution (Figure 1.4); colored pencils

Time: 20 minutes

Procedure: 1. Prior to the beginning of the session, use colored pencils to outline the garden plot on Garden Plot Problem copies. Use one color on two sheets, then a second on the next two sheets, and so on until all garden plots are color coded.

- 2. Group participants into pairs by the color coding on each person's Garden Plot Problem sheet.
- 3. Once participants are paired, allow 10 minutes for participants to process through the reflective thinking model to find a plausible solution to the following problem:

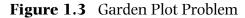
Four friends have recently purchased a garden plot in the shape shown. They want to divide it into four individual gardens that are the same shape and size. Help them solve their dilemma.

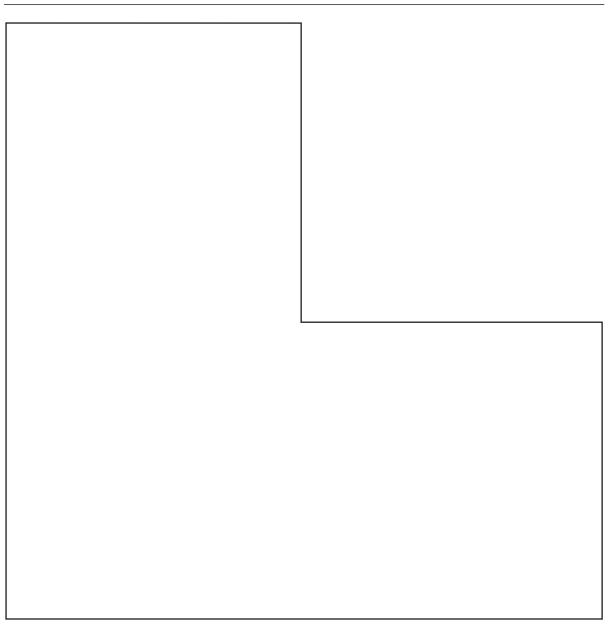
4. Call on a practitioner to demonstrate the solution on the overhead projector. Using the Garden Plot Solution, discuss the model and solutions.

Evaluation: Check for reasonable solutions that fit the criteria.

Debriefing: 1. Did the reflective thinking model provide a process for problem resolution?

- 2. Was reframing necessary?
- 3. What did each participant bring to the problem?

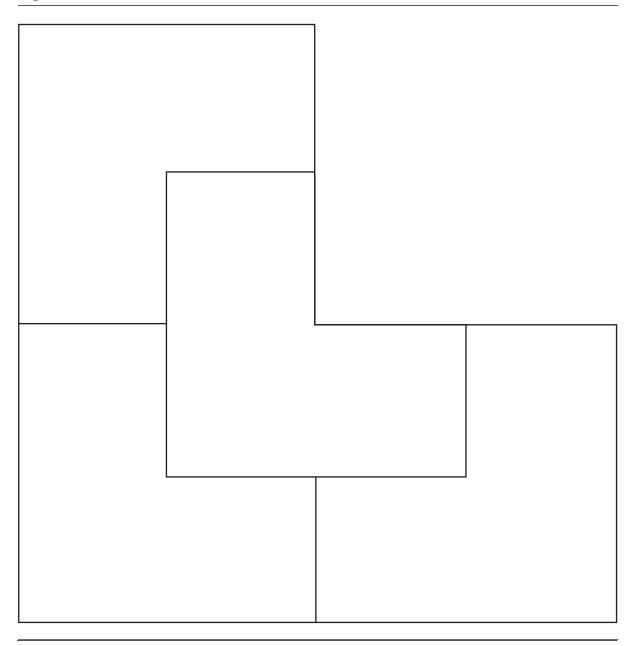




Four friends have recently purchased a garden plot in the shape shown. They want to divide it into four individual gardens the same shape and size. Help them solve their dilemma.

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Figure 1.4 Garden Plot Solution



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Task 4 **Roll On**

Topic: Introduction of the Reflective Thinking Model

Objective: The practitioner will use the Reflective Thinking Model to demonstrate the process of reflective thinking by devising possible solutions to the "roll on" dilemma.

Materials: Reflective Thinking Model (Figure 1.2); toilet paper rolls (enough for every team of three to have a unique design or color); Consensus Guidelines (Table 1.3)

Time: 20 minutes

Procedure: 1. Group participants by randomly distributing individual sections of various designs or colors of toilet paper.

> 2. Provide each team with a roll of toilet paper, and pose the following problem:

Some individuals place toilet paper on the roller so that the end of the roll comes over the top toward the front; others prefer the end to dangle from the bottom at the back of the roll. If you want the end sheet to be at its most accessible point, what is your group's preference for placement of the roll on the toilet paper roller? Justify your answer.

- 3. Once participants are grouped, allow 10 minutes for participants to process through the reflective thinking model and reach consensus, then clarify and justify the team's position.
- 4. Randomly call team leaders (e.g., shortest person on each team) to explain the team's position.

Evaluation: Check for reasonableness of solutions and justifications.

Debriefing: 1. Consensus is an agreement by all participants on an issue. How was your team able to reach consensus?

- 2. Did the reflective thinking model provide a process for problem resolution?
- 3. Was reframing necessary?
- 4. What type of experimentation was necessary?

Task 5 Designing a Classroom

Topic: Introduction of the Reflective Thinking Model

Objective: The practitioners will use the Reflective Thinking Model to devise a physical plan of a classroom housing 40 students that would accommodate team teaching by two teachers.

Materials: A deck of playing cards; Reflective Thinking Model (Figure 1.2); Classroom Layout (Figures 1.5A and 1.5B); Consensus Guidelines (Table 1.3)

Time: 40 minutes

Procedure: 1. Group participants in fours by randomly distributing playing cards (an ace, king, queen, jack, etc.) to each participant.

2. Provide each team with a copy of the Classroom Layout and present the following problem and scenario:

Devise a physical plan of a classroom housing 40 students that would accommodate team teaching by two teachers.

Scale is 1 cm = 4 ft. Each student desk is 2 ft long and $1\frac{1}{2}$ ft wide. Teacher desks are 4 ft \times 2 ft. Room size and layout are indicated on Classroom Layout sheets.

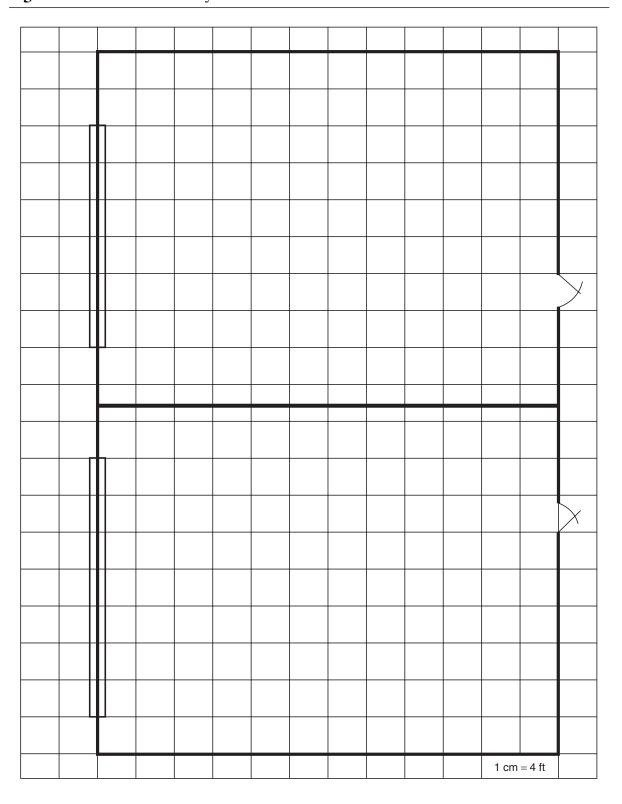
- 3. Once participants are grouped, allow 20 minutes for participants to process through the reflective thinking model, reach consensus on a layout, sketch it onto the grid paper, and develop justification for the solution.
- 4. Randomly call on a team leader (e.g., the person who has attended college the longest period of time) to present layout and justification.

Evaluation: Check for reasonableness of solutions and justification.

Debriefing: 1. Consensus is agreement by all participants on an issue. How was your team able to reach consensus?

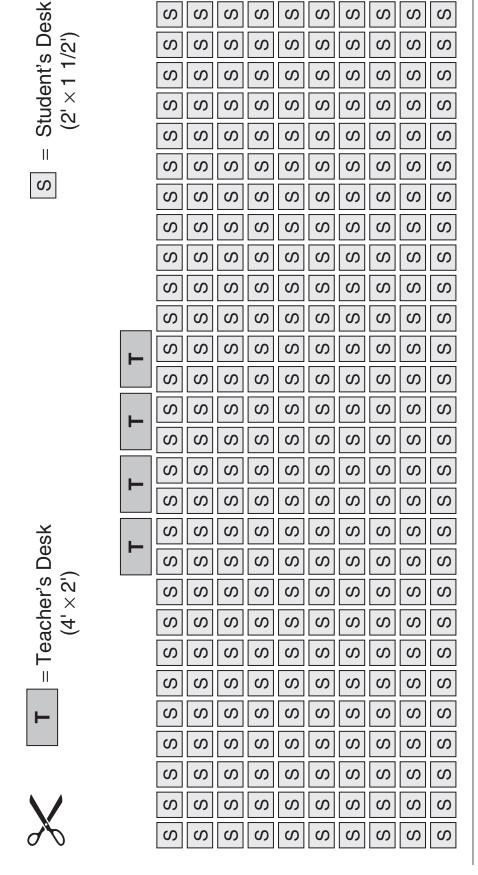
- 2. Did the reflective thinking model provide a process for problem resolution?
- 3. What experiences were brought into the discussion?
- 4. How did the team evaluate the solution?

Figure 1.5A Classroom Layout



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Figure 1.5B Classroom Furniture



NOTE: 1 cm = 4 ft

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Task 6 **Logic Lure**

Topic: Introduction of the Reflective Thinking Model

Objective: The practitioner will use the Reflective Thinking Model to devise a plan for getting all characters in the dilemma to the opposite side of the river.

Materials: Reflective Thinking Model (Figure 1.2); Logic Lure (Figures) transparency (Figure 1.6—characters should be shaded or colored and cut out to allow for mobility when demonstrating the process); Logic Lure (Scene) (Figure 1.7)

Time: 20 minutes

Procedure: 1. Group participants into pairs, counting off by the number that when multiplied by two will equal the number of total practitioners.

> 2. Once practitioners are grouped, allow 10 minutes for them to process through the reflective thinking model to find a plausible solution to the problem that follows:

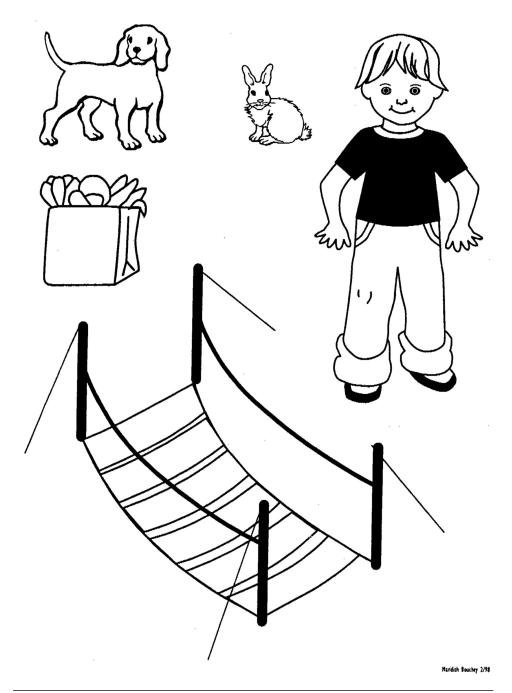
A boy owned a dog, a rabbit, and a bag of vegetables. One day, he was on the edge of a gorge, where there was a shaky old swinging bridge that was only strong and wide enough to hold him and one of his possessions. If he left the dog and rabbit alone, the dog would eat the rabbit. If he left the rabbit and the vegetables alone, the rabbit would eat the vegetables. How did he get safely across the gorge with all three of his possessions?

Evaluation: Check for reasonable solutions that fit the criteria.

Debriefing: 1. Did the reflective thinking model provide a process for problem resolution?

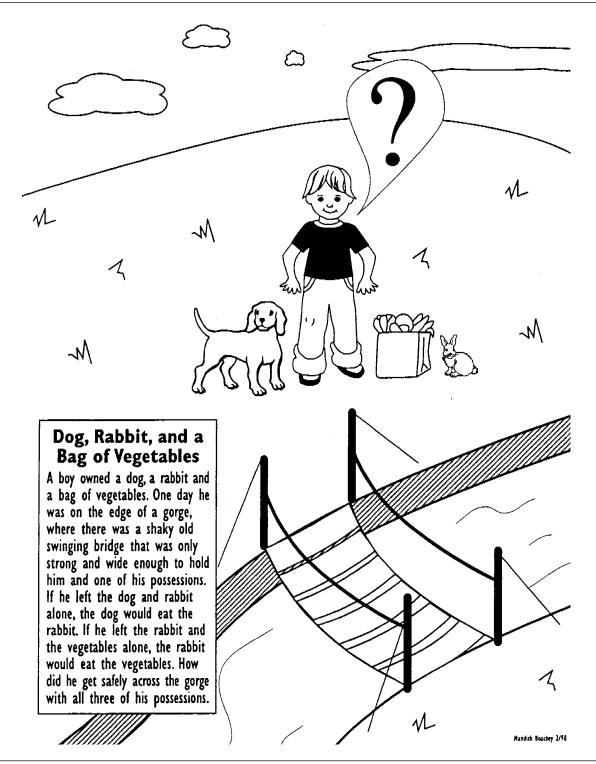
- 2. Was reframing necessary?
- 3. What did each participant bring to the problem?

Figure 1.6 Logic Lure (Figures)



SOURCE: Maridith Bouchey. Used with permission.

Figure 1.7 Logic Lure (Scene)



SOURCE: Maridith Bouchey. Used with permission.

PREPARING A PLAN OF ACTION FOR ENHANCING REFLECTIVE THINKING

In discussing enhancing reflective thinking on the part of practitioners, Dewey (1933) recommends three attitudes that must be nurtured: open-mindedness, wholeheartedness, and intellectual responsibility. Open-mindedness refers to an intellectual receptiveness to alternatives. Wholeheartedness requires a mental, emotional, and physical commitment on the part of practitioners to solve problems. Reflective practitioners then consider intellectual responsibility toward long-term and short-term solutions to the problem.

Development of a plan to evaluate change is the final step toward enhancement of reflective thinking. The purpose of this step is threefold. First, practitioners examine the degree to which their plan is workable, given the constraints of the field setting and the degree to which those constraints can be overcome or can preclude the intervention's implementation. Second, there must be systematic monitoring of adherence to the plan. Self-evaluating and self-monitoring encourage and reinforce reflection on changes in teaching performance. Last, practitioners develop an evaluation plan to determine the effectiveness of the change. The facilitator provides a foundation and encourages practitioners to implement and follow the planning strategy and models, planning for evaluation as needed.

If the plan of action is successful, the practitioner has created a new understanding and reached a higher level of reflection. If the plan of action is unsuccessful, the practitioner continues the cycle of inquiry and reflection, taking into consideration the new information resulting from unsuccessful experimentation toward reaching a goal. Thus, the cycle parallels the reflective thinking model.

During a final 1-hour or 2-hour experience, whether it be in short sessions with preservice practitioners or at the end of a seminar experience, allow practitioners time to develop a plan of action for future growth in reflective thinking. Practitioners will develop one or two specific goals. For each goal, a list of strategies will be made that support reaching the goal. Strategies may include those incorporated throughout the guide, or practitioners may want to select particular strategies indicative of a focus area of concern. Each strategy should be outlined in terms of tasks for completion; target completion dates; and necessary materials, input, and knowledge to complete the task.

Monitoring of the goal's achievement should be formative as well as summative. Identifying those constraints that may serve to block achievement of the goal is essential. Identification of those support resources that will serve to augment goal achievement is equally essential. Devise a monitoring strategy. Establish how feedback will be collected and evaluated. Also, establish definitive criteria for determining that a goal has been met. Most important, plan for success, and plan to celebrate success. Communicate to others your achievements. Tables 1.6 and 1.7 may be used to provide a basic structure with which to create a plan to enhance reflective thinking.

Table 1.6	Preparing a Plan of Action
• Strategy	
• Tasks for c	completion
• Target con	npletion date
• Necessary	materials
• Input	
• Knowledge	e needed to complete the task
• Monetary	considerations
• Constraint	SS .
• Suggested	resources
• Collection	of information and feedback
• Evaluation	and feedback
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 Table 1.7
 Plan of Action: Enhancement of Reflective Thinking

Goal

Method of Calibration	
Monitoring Method and Criteria	
Constraints	
Support Materials	
Completion Date	
Tasks	
Strategy	

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