DOCUMENT RESUME

ED 357 006 SP 034 411

AUTHOR Oxman-Michelli, Wendy
TITLE Critical Thinking as "Critical Spirit." Resource Publication Series 4 No. 7
INSTITUTION Montclair State Coll., Upper Montclair, NJ. Inst. for Critical Thinking.
PUB DATE 92
NOTE 16p.
PUB TYPE Viewpoints (Opinion/Position Papers, Essays, etc.) (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Affective Behavior; *Critical Thinking; *Educational Environment; Educational Objectives; Elementary Secondary Education; Higher Education; *Teacher Role; Teacher Student Relationship; Teaching Methods; Thinking Skills

ABSTRACT

Critical thinking involves both intellectual skills and the critical spirit and the critical spirit in turn encompasses certain dispositions of mind--that is, certain attitudes or tendencies--that motivate, or "animate" a person to think. Becoming a critical thinker involves acquiring both the critical thinking skills and the readiness, willingness and inclination to apply those skills. This approach to critical thinking emphasizes creating an atmosphere or educational environment in which the disposition for critical thinking can be nurtured. Elements of the critical spirit include: (1) independence of mind; (2) openmindedness; (3) wholeheartedness; (4) intellectual responsibility; and (5) respect for others. Because this approach to critical thinking relies heavily on the social environment of the classroom, it raises for teachers a number of social, personal, and ethical issues. Critical thinking tasks provide students with opportunities to develop critical thinking skills, learn subject matter, and develop the critical spirit simultaneously. Teaching for critical thinking, both skills and dispositions, can build upon and reinforce intrinsic motives for learning. Critical thinking dispositions are closely related to a student's conception of the educational process, i.e., his or her educational schema. This schema includes conceptions of the nature of academic tasks, the role of the self as learner, and the nature of knowledge. Teachers can nurture development of educational schemata that support critical thinking by rewarding students when they demonstrate relevant traits and behavior. Successful teaching of the critical spirit involves modeling the critical spirit by the teacher. (IAH)

MONTCLAIR STATE

Critical Thinking As "Critical Spirit"

Wendy Oxman-Michelli

Institute for Critical Thinking
Resource Publication
Series 4 No. 7
1992

Montclair State
Institute for Critical Thinking

Resource Publication Series
1992

The Institute for Critical Thinking at Montclair State is designed to support and enrich faculty development efforts toward critical thinking as an educational goal. Working closely with faculty from Montclair State and colleagues from campuses around the world, its primary purpose is to serve as a catalyst in the development of educational excellence across the curriculum at Montclair State. A collaborative, multi-disciplinary approach is in process, with attention to the study of both the theoretical aspects of critical thinking across the disciplines and their implications for teaching and learning at the college level. In addition, the Institute reaches out to colleges and schools, helping them to incorporate critical thinking into their curricular plans.

As part of this effort, the Institute for Critical Thinking publishes a newsletter, *Inquiry: Critical Thinking Across the Disciplines* on a monthly basis during the academic year. The newsletter includes information about the activities of the Institute as well as short papers on topics relevant to critical thinking. The Institute also publishes an ongoing series of Resource Publications. These documents make available, to interested faculty and others at Montclair and elsewhere, working papers related to critical thinking as an educational goal, offering extensive discussions of the kinds of issues that are presented in summary form in the newsletter. Resource publications are regarded generally as works-in-progress: articles written as tentative arguments inviting response from others, articles awaiting the long publication delay in journals, etc.

Proceedings of our annual conferences are also published by the Institute. To date the following proceedings have been published and are available at cost:

Critical Thinking: Language and Inquiry Across the Disciplines, Conference 1988 Proceedings
Critical Thinking: Focus on Social and Cultural Inquiry, Conference 1989 Proceedings
Ethical Principles for Development: Needs, Capacities or Rights? Proceedings of the IDEA/Montclair Conference

In addition, the proceedings of more recent conferences will soon be available. In preparation are:

Critical Thinking: Focus on Science and Technology, Conference 1990 Proceedings
Critical Thinking: Implications for Teaching and Teachers, Conference 1991 Proceedings

The Institute welcomes suggestions and requests for our Resource Publication series, as well as for our other publications and activities. Correspondence may be addressed to:

Wendy Oxman-Michelli, Director
Mark Weinstein, Associate Director
Institute for Critical Thinking
224 Life Hall
Montclair State
Upper Montclair, NJ 07043

CRITICAL THINKING AS "CRITICAL SPIRIT"

Wendy Oxman-Michelli

> *"If we were compelled to make a choice between... [critical] attitudes, and knowledge about the principles of logical reasoning together with some degree of technical skill in manipulating special logical processes, we should decide for the former" (Dewey, 1933, p. 34).*

Which is more important -- knowledge about critical thinking and skill in its application, or the willingness to approach ideas, events, and issues in a thoughtful, critical manner? The startling statement by John Dewey, quoted above, reveals the importance he places on the "critical spirit," the willingness, the inclination, the readiness, to "consider [ideas] in a thoughtful way...— a readiness that contrasts strongly with the disposition to pass judgment on the basis of mere custom, tradition, prejudice, etc., and thus shun the task of thinking." (Dewey, 1933, p. 34).

Happily, there is no need to choose among critical thinking knowledge and skill, values and attitudes. Becoming a critical thinker involves acquiring both the intellectual skills that constitute, according to one or another account, critical thinking skills and the readiness, willingness, inclination to apply these skills.

The critical spirit encompases "dispositions," or "dispositions of mind," as they are often referred to. Dispositions are attitudes and tendencies rather than abilities. They are "intellectual virtues," or personal traits of character which motivate, or "animate," as Dewey puts it, a person to think.

Critical thinking as "critical spirit" is an "ideal," (Siegel, 1988), which may, in practice, characterize an individual's typical way of life to a greater or lesser extent, and may characterize his or her approach to any particular situation or type of situation to a greater or lesser extent as well. Thinking critically includes making initial judgments of situations to determine whether or not the situation itself calls for critical thinking at all, or whether routine or emotional responses might be more appropriate. Deciding whether an academic task requires critical thinking, for instance, itself involves a critical judgment. When a person tends to approach situations with a critical attitude, when he or she is inclined to think critically in situations in which it is reasonable to do so, when critical thinking is a dominant characteristic of that person; when it is his or her dominant "cognitive style," he or she may be called a critical thinker. The opposite of critical thinking, in this sense, is thoughtless intellectual compliance and passivity. A critical thinker is one who tends to think critically. A non-critical thinker is one who tends to be intellectually compliant and passive.

Dispositions for Critical Thinking

Critical thinking as "critical spirit" focuses our attention on the dispositions of mind that motivate critical thinking (Passmore, 1972), and places emphasis on aspects of character and personality, and the development of motives, interests, values and attitudes. It de-emphasizes, but does not deny the need for the acquisition of skills, which are seen as necessary but not sufficient for development as a critical thinker. The development of dispositions for critical thinking and the development of critical thinking skills are independently valid, mutually dependent educational goals. Which comes first? Students can benefit if a particular teacher establishes an environment conducive to critical thinking and teaches in a manner that encourages the development of the critical thinking dispositions. These benefits can accrue while that teacher develops proficiencies in the direct teaching of critical thinking skills themselves. or even if that teacher remains less than proficient in teaching these skills. Having acquired dispositions for critical thinking, a student is likely to learn some of these skills elsewhere, while participating in mindful learning activities in or out of school.

This approach, emphasizing the development of the critical spirit, focuses attention on the kind of person one is, rather than on what a person can currently do, and on the educational environment in which the dispositions for critical thinking can best be nurtured. A critical thinker, is a person for whom a "critical quest for reasons is a dominating and integrating motive" (Scheffler, 1965). Siegel's definition of a critical thinker as one who is "appropriately moved [that is, motivated] by reasons" captures well the emphasis on the development of character traits and values. In acquiring the "critical spirit," Siegel notes, a person learns to value good reasoning, and in so doing, habitually believes and acts in accordance with that value.

Paul (1990) refers to these attriutes as "rational passions;" critical thinkers *care* about critical thinking. They share a passionate, "compelling drive" to engage in it; that is, they *love* to do it, or at least like doing it and dislike not doing it, in situations which call for its use. They are "personally animated; enthused by these dominant attitudes in their character" (Dewey, 1933, p. 29).

What are the elements of the critical spirit?

Many general psychological attributes that underlie success in educational experiences are among those that are considered specific to the development of dispositions for critical thinking.

Included in most accounts of critical thinking dispositions (Dewey, 1933; Paul, 1988; 1990; Siegel, 1988; Lipman, 1985, Ruggiero, 1988; Walsh & Paul,1988), are:

independence of mind, in the sense of intellectual autonomy, self-understanding, self-confidence, and courage;

openmindedness, in the sense of alert curiosity, attentiveness, the spontaneous outreaching for alternative perspectives, intellectual flexibility and the willingness to suspend judgment;

wholeheartedness; that is, enthusiasm and perseverence in pursuit of an intellectual goal;

intellectual responsibility, in the sense of objectivity, integrity, and humility, as well as confidence in and a commitment to the processes and the consequences of reason, and

respect for others, in terms of sensitivity, empathy, fairmindedness, readiness to listen, and willingness to consider the others' points of view.

The development of a critical spirit, ideally, involves development of these psychological attributes concurrently with the development of critical thinking skills. It is a necessary aspect of teaching for critical thinking, since the skills will not be acquired in a meaningful way if attention is not given to the dispositions. Dispositions will develop only as they are welcomed, encouraged, supported, and rewarded during the course of mindful learning activities.

This approach to critical thinking raises for teachers a number of social, as well as personal and ethical issues involved in teaching. It is reliant, more so than other approaches, on attention to the nature of the environment, particularly the social environment of the classroom, in which it is to be nurtured. Because the desired learning goals involve attributes of being, teachers must become especially knowledgeable about and sensitive to the characteristics and needs of their students. They must develop techniques of coping with the effects of their students' discovery of the frustrations and potential involved in critical thinking, particularly when it turns on the teacher-student interaction itself.

Reflectivity as a Character Trait

There is some evidence that the tendency to be reflective rather than impulsive is a characteristic of personality, like introversion *vs.* extraversion. Reflectivity/impulsivity, as a personality characteristic, has been studied as an element of cognitive style. There is also some evidence that there is a direct relationship between reflectivity as a personality attribute and scholastic ability, as determined by measures of school performance and other tests of mental ability (Messer, 1976). The research studies that have produced these findings employ tasks that engage subjects in making judgments under conditions of uncertainty, and determining their speed and accuracy in making the judgments. These tasks usually involve a series of multiple choice test items with response options that are very similar to one another. A test item, for instance, might present one picture and ask which of the several pictures given as response options is the same as the picture shown in the stem of the test item. All pictures differ in very minor, subtle details. People who complete the task quickly and inaccurately are judged to be impulsive; people whose responses are produced slowly but accurately are judged to be reflective. There is no reason to think that personality characteristics cannot be modified, and, of course, no reason to assume that a reflective approach is always appropriate regardless of context. Baron (1985) and Feuerstein, Rand, & Hoffman (1989), however, presents evidence that poor students can improve their academic achievement when special attention is given to reducing their tendency to be impulsive.

Motivation for Learning

Critical thinking tasks have previously been defined as complex academic tasks that are extended in time, have multiple objectives, and contain elements of intrinsic interest, choice, and/or social process. Based on pivotal, central concepts in a curricular field of study, critical thinking tasks contain elements of inherent uncertainty or ambiguity, providing students with opportunities for thought, often in the form of issues or problems to be resolved. Through tasks like these, students learn curricular subject matter and develop critical thinking skills simultaneously. These tasks also provide opportunities to develop the critical spirit; to welcome, encourage, nurture, and support evidence of intellectual independence, open-mindedness, wholeheartednesss, responsibility, and respect for others.

Bruner (1966), in an essay entitled "The Will to Learn," discusses four motives for learning that students bring to classroom experiences. These motives propel a student to active engagement with a critical thinking task, once the demands of the task are understood. These motives are curiosity, a drive for competence, a desire to emulate a model, and a desire for reciprocity; to participate as a member of a group. There are many ways in which teaching for critical thinking can build upon and reinforce these intrinsic motives for learning. For

instance, selecting a curricular area of intrinsic interest to students will build upon their inherent curiosity. Structuring critical thinking tasks that are evaluated both for knowledge acquisition and critical thinking skill development will build upon students' drive for competence. Justifying the pedagogical decisions that a teacher has made while describing and explaining academic tasks to students, and in response to their questions about their tasks, provides them with a desirable model of the critical thinking process. Structuring tasks that involve students in group interaction builds on students' intrinsic desire to contribute to a group effort. As Resnick (1987) notes, social interaction is nearly always cited as an organizational structure for critical thinking instruction.

> *"The social setting may function to motivate students, encouraging them, supporting their efforts, and conveying social status and validation on the activity of critical thinking itself. Students learn that "they have the ability, the permission and even the obligation to engage" in critical analysis...much of learning to be a good thinker is learning to recognize and even search for opportunities to apply one's mental capacities"(p. 41).*

Critical thinking dispositions can be taught, indirectly, during the course of coaching students through critical thinking tasks. Instructional strategies that explicitly teach students about the nature of critical thinking tasks, developing their metacognitive knowledge about such tasks, can be included. Coaching strategies that provide rewards for achievement, not only in terms of final completion of the task, but that also help students develop positive attitudes toward critical thinking and toward themselves as active learners can be used effectively. Teachers can coach students toward the development of such critical thinking dispositions as independence of mind, openmindedness, wholeheartedness, intellectual responsibility, and respect for others. The coaching techniques of acknowledgment and praise for evidence of these dispositions, when appropriate in context, will reinforce them for the student, and mediate their learning, for others (Covington, 1985).

The critical thinking dispositions are closely related to a student's conception--his or her schema, or implicit theory -- of the educational process itself. This educational schema, or schema for schooling, determines the expectations with which one approaches academic requirements. These include conceptions of the nature of academic tasks, of the role of the self as learner, and of the nature of knowledge. It may be helpful to note some of the elements of an educational schema that characterize, ideally, a student as a critical thinker. Four of these elements are listed below, with some of the ways in which they might manifest themselves in a classroom. The first represents students' attitudes toward a critical thinking task itself as a mindful learning task. The second represents attitudes toward the self as learner, in situations calling for critical thinking. The third and fourth deal with ideas about the nature of knowledge.

Teachers can reward students or groups of students, when they show evidence that they tolerate and accept the ambiguity of a critical thinking task. This tolerance may be inferred when students demonstrate that they:

1. recognize that in order to complete the task successfully, thoughtful effort rather than routine application of prior knowledge will be needed;

2. accept the critical thinking task as an appropriate, intrinsic part of the educational process;

3. recognize that the critical thinking task creates some risk and thus generates some natural anxiety that must be overcome;

4. are willing to forestall closure; to reflect

Students can be rewarded when they demonstrate that they regard themselves as active learners, such as when they:

1. express the belief that how well they do depends on their own efforts rather than fate, luck, or the whim of the teacher;

2. recognize their own capacity to generate useful knowledge, relevant information, insight, etc., through active inquiry;

3. recognize that their own ideas might legitimately differ from those of the teacher, other students;

4. are willing to plan and engage in systematic extended elaboration in approaching and completing the academic task;

5. are willing to take responsibility for one's own learning and to contribute to the learning of others;

When students demonstrate a conception of knowledge as sets of interrelated ideas rather than as bits of isolated information, teachers can reward them. This conception of knowlege may be seen when students are found:

1. demonstrating an awareness of relevant contexts, such as historical or disciplinary contexts;

2. demonstrating an awareness of relevant vocabulary (e.g. logical connectives; criteria)

3. seeking connections among objects and events; among ideas in diverse disciplines; between school and out-of-school knowledge;

4. seeking organizing principles, maintaining independence of concrete, literal information, and using abstract terms to summarize ideas.

Teachers can also reward students when they demonstrate a conception of knowledge as socially constructed sets of ideas, with alternative sets possible, and change likely. Such a conception of knowledge may be demonstrated by students when they show that they

1. are aware of alternative points of view, frames of reference, perspectives;

2. are aware of alternative modes of inquiry; alternative approaches to a particular body of knowledge;

3. seek divergent information and ideas in addition to those that initially come to mind; pose hypotheses, draw inferences;

4. are sensitive to the potential relevance of apparently unrelated information; suggest analogies.

Critical thinking dispositions are "cumulatively reinforcing," (Lipman, 1985). As they appear spontaneously or are elicited and then rewarded in the classroom, the likelihood that they will recur will increase. The traits of critical thinking, then, develop the way many other characteristic psychological attributes develop in individuals, such as "habits."

Mediated Learning and the Development of the Critical Spirit

A well-known program designed to improve students' thinking abilities, called *Instrumental Enrichment* (Feuerstein, R., Rand, Y, Hoffman, M. B., Hoffman, M., & Miller, R., 1980), emphasizes the development of intrinsic motives for learning, as well as the role of mediated learning in developing students' metacognitive awareness of tasks and of the need to plan and monitor one's own performance. Feuerstein, Rand, & Hoffman, (1989) attribute the poor school performance of disadvantaged Israeli students to a relative lack of mediated learning experiences in early childhood. For example, parents and teachers, in helping a child interpret his/her experiences, teach that child, indirectly, about the interpretive process. Children learn how to plan strategies, how to elaborate, how to relate pieces of information, how to reason, etc. when parents and teachers help them plan, elaborate, relate information, and give reasons, during the course of learning experiences in early childhood, most of which build on children's spontaneous curiosity and interests.

Instrumental Enrichment engages adolescent students who have fallen behind in academic achievement in tasks designed to develop these general intellectual skills of planning, elaborating, relating, etc. This remedial educational program uses curricular materials and exercises that are purposely "content-free," unrelated to school materials and exercises, to free the students from their negative perceptions of themselves and of prior school experiences and from their habits of intellectual passivity in school, and to provide for the active generation of applications to school contexts by students as part of the exercises themselves.

Among the goals of the Instrumental Enrichment Program are the development of intrinsic motives for learning, and insight and understanding of the thought processes responsible for success and failure (Bransford, Arbitman-Smith, Stein, & Vye, 1985). Teachers, using Instrumental Enrichment Program materials, deal explicitly with student perceptions of the characteristics of each task, engage students in active organization of the information provided in each task, and help students to relate the skills involved in the task to other experiences to which the skills are applicable. "Bridging," or relating task-related skills to applications in other situations prompts students to draw on their own experiences, to help students learn from each other, and to encourage transfer to other situations, including academic settings. Without these special materials, teachers can apply the general principles involved in Instrumental Enrichment, using regular academic tasks.

Developing the "Critical Spirit" in the Classroom

The nurturance of intrinsic motives for learning that students bring to their early school experiences, such as curiosity, competence, reciprocity, and emulation of a model (Dewey, 1933; Bruner, 1966; Paul, 1990) are clearly related to the development of the "critical spirit." The curious, enthusiastic, involved, active learner, who works well with teachers and classmates, who has a positive self concept and confidence in his/her abilities and potential, has a good chance of developing as a critical thinker if critical thinking is encouraged in the schoolroom. This ideal learner, from the point of view of a teacher who is himself or herself a critical thinker, is surely a joy, but hardly a challenge! The teacher's challenge lies in the further development of these attributes. The more curious, enthusiastic, involved, and active the student becomes, the better he or she learns to work well with others, the more his or her self concept and confidence expands, the better the chances of developing as a critical thinker. On the other hand, a teacher who has not yet developed a critical spirit himself or herself may, unhappily, see the student's critical thinking as a challenge to authority rather than as an intellectual and professional challenge. He or she cannot serve as a model critical thinker for students, nor is he or she likely to identify opportunities to reinforce the critical spirit in students.

A teacher who has developed the dispositions for critical thinking himself or herself with regard to the profession of teaching, is in a good position to establish, over time, an environment in which students can develop these dispositions themselves. While modeling these dispositions whenever possible, the teacher must also engage students in a wide variety of academic tasks, eliciting and then rewarding students' expression of intellectual curiosity and wonder, of openmindedness and wholeheartedness, of objectivity, of fairmindedness, empathy and responsibility.

Critical Thinking and the Role of the Teacher

Siegel recommends that teaching should be done in the "critical manner."

> *A teacher who utilizes the critical manner seeks to encourage in his or her students the skills, habits, and dispositions necessary for the development of the critical spirit. This means, first, that the teacher always recognizes the right of the student to question and demand reasons, and consequently recognizes an obligation to provide reasons whenever demanded. The critical manner thus demands of a teacher a willingness to subject all beliefs and practices to scrutiny, and so to allow students the genuine opportunity to understand the role reasons play in the justification of thought and action" (1988; p. 45).*

Siegel does not provide direct guidance for teachers seeking to teach for critical thinking dispositions. He suggests that whichever of two rival teaching methods conforms more closely to "teaching in the critical manner" is more desirable and should be used. Siegel's examples are drawn from his own perspective on critical thinking abilities. That is, he suggests that the teacher reinforce those skills of rational argument that he has identified with critical thinking itself. Siegel emphasizes the role of reason in "the decisions teachers make and the things they do as teachers."

Passmore (1972) evokes an image of a teacher, like Siegel's ideal, who is willing to explain decisions and to consider, as appropriate for classroom discussion, questions such as whether a rule might or might not be justifiable. He contrasts that image with one of another teacher, for whom any questioning or criticism by students of any aspect of the educational process—from established "facts" to school rules to textbook-presentations of principles— is considered a "moral misdemeanour."

Developing the critical spirit in one's students may be difficult, beyond the earliest grades. It requires an unusually secure teacher; one in whom the "critical spirit" is well established, who has the support and encouragement of his or her supervisors and colleagues, and who has well-developed professional leadership skills. Passmore (1972) notes that

> *Anybody who sets out to teach his pupils to be critical must expect constantly to be embarrassed. He can also expect to be harassed, by his class, by his headmaster, by parents. If he gives up the idea of teaching his pupils to be critical and salves his conscience by training them in skills, this is not at all surprising. But he should at least be clear about what he is doing, and even more important, what he is not doing (p. 431).*

Many teachers report that it takes some time before students, particularly adolescents, engage readily in critical thinking tasks when they are first introduced into the classroom. Doyle (1983), and Oxman and Barell (1983) report that initial student resistance is a major obstacle to the regular use of critical thinking tasks by teachers. Understanding, expecting, and being prepared for this resistance, and for challenges from students as they apply critical thinking to the "facts," rules, and procedures of the school environment, is part of the teacher's preparation for teaching for critical thinking.

Critical Thinking as Critical Spirit and Curricular Issues

The critical thinking dispositions may be seen as general and subject-neutral. The dispositions stand in contrast to critical thinking skills, some of which may be, if not subject-specific, then at least more commonly or appropriately applied within one contextual domain than in another, such as within science in contrast to literature. As general personality attributes, critical thinking dispositions are "transferable" from one situation to another if they are welcomed and found useful. However, students test out, negotiate, and then adapt to the behavioral expectations of each teacher they encounter, and need to be encouraged to express the "critical spirit" appropriately in each new situation. The public nature of classroom discourse must be considered as well; to involve young children in the full range of critical thinking topics and issues, including those of parental and teacher authority, may require special skill on the part of the teacher. Each group poses special classroom management challenges for the teacher. It is the teacher's responsibility to involve students in academic tasks involving topics and issues within which the critical spirit can and should be most freely expressed, and to adapt these tasks to the developmental level, and interests, of the students.

Summary

The critical spirit concerns the personality attributes, or dispositions, that motivate a person to think critically. Thus, its focus is on the development of the character traits of a critical thinker, rather than on the acquisition of specific critical thinking skills. Critical thinking dispositions include such traits as intellectual independence, openmindedness, wholeheartedness and responsibility, as well as respect for the intellectual attributes of others.

The critical spirit can be nurtured, indirectly, through a variety of academic tasks. The seeds of such development are already present, in the form of intrinsic human motives. Children can be taught to tolerate ambiguity, to regard themselves as active learners, to consider interconnections among aspects of knowledge, and to understand alternative, and changing, perspectives and sources of information. Teachers who are themselves critical thinkers and understand the place of critical thinking in the educational process are best able to handle the initial resistance and the continuing challenge that teaching for the critical spirit represents.

References

Baron, J. (1985). *Rationality and intelligence.* New York: Cambridge.

Bransford, Arbitman-Smith, Stein, & Vye (1985). Improving thinking and learning skills: Analysis of three approaches. In J.W. Segal and S.F. Chipman (Eds.). *Thinking and learning skills (Vol. 1).* Hillsdale, NJ: Erlbaum.

Bruner, J. (1966). *Toward a theory of instruction.* Cambridge, MA: Harvard University Press.

Covington, M. (1985). Strategic thinking and the fear of failure. In J.W. Segal and S.F. Chipman (Eds.). *Thinking and learning skills (Vol. 1).* Hillsdale, NJ: Erlbaum.

Dewey, J. (1933). How we think: A restatement of the relation of reflective thinking to the educative process. Lexington, MA: D.C. Heath.

Doyle, W. (1983). Academic work. *Review of Educational Research, Vol. 53, 2, Summer), 159-199.*

Feuerstein, R., Rand, Y, Hoffman, M. B., , & Miller, R. (1980) *Instrumental Enrichment.* Baltimore: University Park Press.

Feuerstein, R., Rand, Y, & Hoffman, M. B. (1979). *The dynamic assessment of retarded performers*. Baltimore: University Park Press.

Lipman (1985). Thinking skills fostered by Philosophy for children. In J.W. Segal and S.F. Chipman (Eds.). *Thinking and learning skills (Vol. 1)*. Hillsdale, NJ: Erlbaum.

Messer, S. (1976). Reflectivity-impulsivity: A review. *Psychological Bulletin, 83(6), 1026-1052.*

Oxman, W. & Barell, J. (1983). *Reflective thinking in schools: A survey of teacher perceptions*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada.

Passmore, J. (1972). On teaching to be critical. in R. F. Dearden, P H. Hirst, and R. S. Peters (Eds.). *Education and the development of reason*. Boston: Routledge & Kegan Paul.

Paul, R. (1988). Two conflicting theories of knowledge, learning, and thinking: The didactic and the critical. In W. Oxman & M. Weinstein (Eds.). *Resource Publication Series 1, Number 2*. Upper Montclair, NJ: Montclair State College, Institute for Critical Thinking.

Paul, R. (1990). Critical Thinking. Rohnert Park, CA: Center for Critical Thinking and Moral Critique.

Resnick, L. (1987). *Education and learning to think*. Washington, D.C.: National Research Council.

Ruggiero, V. (1988). *The art of thinking: A guide to critical and creative thought.* (2nd Ed.). New York: Harper & Row.

Scheffler, I. (1973). *Reason and teaching*. Indianapolis: Hackett.

Siegel, H. (1988). *Educating reason: Rationality, critical thinking, and education.* New York:Routledge, Chapman & Hall.

Walsh, D & Paul, R. (1988). *The goal of critical thinking: From educational ideal to educational reality*. Washington, D.C.: American Federation of Teachers.

Note: This resource publication presents a preliminary version of a chapter to be published in The Many Faces of Critical Thinking, a compilation of a variety of approaches to conceptualizing critical thinking as an educational goal.

Many Faces of Critical Thinking

Tentative Outline

Section I. Critical Thinking and Education for Judgment

1. Critical thinking as mindful learning
2. Critical thinking as "critical spirit"
3. Critical thinking as reasoning
4. Critical thinking as problem solving
5. Critical thinking as creativity
6. Critical thinking as cognitive development
7. Critical thinking as intelligence
8. Critical thinking as general intellectual skills
9. Critical thinking as literacy
10. Critical thinking as learning in the disciplines

Section II: Critical Thinking and Education for Transformation

11. Critical thinking as autobiography
12. Critical thinking as critical literacy
13. Critical thinking as community
14. Critical thinking as critical pedagogy