Critical Thinking and Problem-Solving in the Elementary School Curriculum

Chaotic convulsions are frequent in contemporary elementary school education. The current convulsion appears to focus on how we can teach elementary school students to be critical in their thinking. If we succeed, then we can rest assured that we as Americans can keep our competitive edge in the world. In the meantime, international conferences, government-sponsored committees, and media reports are grappling with this latest issue on critical thinking. What has come out of these findings so far is a lack of clarity on just what is critical thinking. In particular, there seems to be little concern on clarifying the difference between critical thinking and problem-solving. Many educators and critics of the schools give the impression that the two terms are synonymous.

Can we or should we draw a distinction between critical thinking or problem-solving? Perhaps we can and we should to clear the muddle. We can begin cautiously with D'Angelo's claim, "All we can say is that some critical thinking skills are used in the problem-solving approach."[1] This claim is not particularly enlightening but it is a start. To push our distinction further we can say that problem-solving as it is now conceptualized is based on scientific method, e.g. Dewey's problem-solving approach. Critical thinking, however, consists of skills which analyze ideologies outside the pale of problem-solving. That is to say, critical thinking takes on issues which the problem-solving approach could not or would not tackle. For example, in the elementary school curriculum there are subjects in which the scientific method would be an inadequate approach to analyze particular issues or obstacles.

Another way of drawing the distinction between critical thinking and problem-solving is to assess the value and status of each approach, granting there is a distinction. What elementary educators must consider is that what passes for problem-solving may not be the only approach to make students more critical in their thinking. If these educators examine the various disciplines which are part of the elementary curriculum, they might realize that certain disciplines do not fit into the problem-solving approach, i.e. the scientific method.

For the most part, elementary school educators have not made any distinctions between critical thinking and problem-solving. Even the recent report prepared by the National Commission on Excellence in Education (NCEE) illustrates this fault. One of the recommendations is that a "sound base" in problem-solving skills should be provided for elementary school students.[2] There is no explanation in the report of what problem-solving skills might entail, let alone how a sound base can be established.

When and if we can clarify the notion of sound base, we might take the next step in establishing a curriculum with problem-solving and critical thinking skills. But some educators would say that this is an unnecessary step because the "back to basics" approach is the best way to make elementary school students critical thinkers or problem-solvers. This approach, others claim, would impoverish curricular and pedagogical approaches to student learning.[3]

The preoccupation with the curriculum approach has many elementary school educators scurrying about for solutions which are ill-founded. The NCEE report, for example, is of current interest but it is unlikely that educators will implement the recommendations for some time. Curriculum reform, therefore, is unlikely when considering certain obstacles. Illustrations of these obstacles would be lack of suitable materials, obsolescent values, repressive administrations, and apathetic faculties.[4] These obstacles and support from the local community make reform extremely difficult.

Linked to these obstacles are curricular materials which contain thinking skills exercises. In many ways these materials reflect the confusion which now exists in teaching problem-solving or critical thinking. In addition, the proliferation of learning kits, workbooks, pre-packaged materials, and instruction programs has made selection of suitable materials a difficult task for elementary school practitioners. It should be noted that in many school districts curricular material selection is done by the central office curriculum staff, thus limiting the local school selection.

Another element which enters in material selection is that "teachers lose control of the curricular and pedagogic skills to large publishing houses, these skills are replaced by techniques for better controlling students."[5] In other words, classroom teachers become managers and they are restrained by the publishers' formats.

Furthermore, what we have in many school districts are commercially-prepared "teacher-proof" materials which strongly resemble standardized reading achievement tests or materials that contain mock items from intelligence tests.[6] These materials claim to teach critical thinking skills. Perhaps they do to a degree but these materials are not systematic in teaching thinking skills.

The upshot of this approach is that there is little indication of whether classroom teachers are giving instruction in problem-solving or critical thinking. All we seem to have is an amorphous mass of thinking skills, taken from reading and mathematics. Moreover, as McPeck correctly points out, "Contemporary programs in critical thinking attempt to bypass the problem of having knowledge of a field by treating the requisite knowledge as though it were common knowledge."[7]

The above-mentioned problems presently prevent any sweeping changes in establishing a sound base for teaching critical thinking or problem-solving skills at the elementary school level. The teaching of isolated thinking skills

continues in many classrooms which may, in part, be caused by teacher-proof materials.[8]

In our attempt to examine the distinction between critical thinking and problem-solving we have been drawn to some issues in elementary education which appear derivative. These issues, however, are not derivative by any means; they reflect major issues which focus on our distinction. The current practice of teaching thinking skills is chaotic. Any talk of curriculum reform seems to be short-term. And any attempt to examine the issues concerning the place of critical thinking and problem-solving are superficial.

Where do we go from here? Is it a matter of waiting for the next convulsion? We have to recapture the meaning and use of critical thinking and problem-solving. But we also must capture the significance of these concepts. Somehow our analysis must begin anew and find the linchpin for the ways to address the empirical issues on reforming elementary education curricular offerings in critical thinking and problem-solving. Can this be done? Some would say such an analysis is not possible because of the crystallization of concepts.[9] Conceptual analysis, however, does not have to end up in a dry second order exercise. Rather, through analysis and by drawing distinctions we might put a little philosophy back into the construction of the elementary school curriculum. It is a great way to avoid convulsions.

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NOTES

[1]Edward D'Angelo, *The Teaching of Critical Thinking*, p. 19, B. R. Gruner, Amsterdam, 1971.
[2]National Commission on Excellence in Education, *A Nation At Risk: The Imperative for Educational Reform*, pp. 26 & 27, U.S. Department of Education, Washington, D.C., 1983.
[3]John I. Goodlad, "Can Our Schools Get Better?," pp. 342-347, Phi Delta Kappan, January 1979.
[4]Robert S. Zais, *Curriculum: Principles and Foundations*, p. 506, Thomas Y. Crowell Company, New York, 1976.
[5]Michael W. Apple, "Curricular Form and the Logic of Technical Control: Building the Possessive Individual," pp. 254-257, *Cultural and Economic Reproduction in Education*, Routledge & Kegan Paul, Boston, 1982.
[6]See Random House workbook series entitled *Scoring High* and Innovative Sciences, Inc. of Stamford, Conn., *Thinking Skills*, an integrated instructional package.
[7]John E. McPeck, *Critical Thinking and Education*, p. 156, St. Martin's Press, New York, 1981.
[8]Dolores Durkin, "What Classroom Observations Reveal about Reading Comprehension Instruction," pp. 481-533, Reading Research Quarterly, Number 4, 1978-1979, XIV: 4.
[9]Walter Feinberg, *Understanding Education*, p. 114, Cambridge University Press, New York, 1983.