Educational Technology: The Closing-In or The Opening-Out of Curriculum and Instruction, by Kenneth Komoski, Syracuse, NY: ERIC Clearinghouse on Information Resources, Syracuse University.

Reviewed by Cheryl Amundsen

Kenneth Komoski, like generations of educational critics in the United States, argues that the inflexible, uniform curriculum of public education does not reflect the needs of either the individual learner or present day society In his view, the emergence of the textbook industry in 1840 provided the major elements for a rigidly structured, product oriented system which still dominates in most schools today. Pointedly, he attacks the utilization of the newer or advanced technologies in the schools, a practice which has been hailed in many corners as being more learner centered and interactive. Komoski contends that educators have missed the potential which the newer technologies offer because they have employed them simply to do more of the same, but more efficiently. He believes that, "curriculum as an adaptive, equilibrium-seeking force that keeps the school in touch with the present while moving it into the future, is no longer an option; it is an imperative" (p. 15).

Komoski supports his arguments through the discussion of three dichotomous perspectives: systematic versus systemic curricular perspectives; exploitative versus cooperative instructional technologies; and closed-in versus opened-out curriculum and instruction. He then proposes some directions and solutions which, unlike those proposed by other educational critics, may be significant enough to equal the magnitude of the reforms he recommends.

Komoski describes current thought and practice concerning curricular development as systematic. He argues that instead, it should be systemic. He contends that in most schools: 1) the emphasis is on the ends (the test scores) rather than the *means* (the learning process); 2) the learning process is generally perceived as working through a procession of commercially produced instructional materials or systems; and 3) the commercially produced materials are based on fixed learning objectives with a narrow focus which excludes a wholistic perspective of the learning process. Komoski would like to see curriculum development become a dynamic, systemic process; a cooperative effort which includes the educators, the learners, the parents and the community.

A primary interest of Komoski's has been the instructional resources and materials which are used by teachers and learners. From this perspective, he is concerned that the newer instructional technologies, which have so much potential for positive impact, are being generally misused. He makes a distinction between technologies which are exploitative in nature and those which are cooperative "with the aesthetic and rational capabilities of human nature" (p. 9). He maintains that the first view of technology has dominated in western society: "it has been the exploitative technologies, with their undeniable and demonstratable efficiency and effectiveness, that have shaped our thinking about, and our practice of all technologies -including those such as

medicine and teaching that, presumably, function more effectively when practiced as cooperative technologies" (pp. 10-11). He argues that uses of instructional technologies are generally exploitative in nature because the primary mode of utilization is "drill and practice" linked to specific objectives and standardized achievement tests determined by the commercial creators of the technology. Komoski discerns that educators are generally pleased with these efforts because they have been told that *productivity* should be their major concern and they have defined productivity as doing more of the same faster and better.

Systematically structured curricula which employ instructional materials and technologies in an exploitative manner characterize what Komoski labels "closed-in" curriculum and instruction. He states, "by committing to a systematically packaged, closed-in curriculum program that promises results on a pre-determined measure, it is easy to ignore the need to develop an opened-out systemically-evolving curriculum designed to educate students for an unknown future, rather than to train them to do well on today's known tests" (p. 14).

Komoski believes that to remedy the situation, administrators and teachers must simply become more involved and work in cooperation with the learner and the community in the development of relevant curricula. He recommends that the structure, stated objectives and instructional methods underlying any integrated system, whether textbook or computer-based, should be examined before making a decision to purchase. He strongly believes that commercially produced instructional materials should not comprise the learner's total education, but that different learning experiences should be designed, for example, community-based experiences or peer-teaching experiences. He cites the need "to carefully think through the educational purposes of the school and the need to design, select, and arrange learning experiences that treat each learner as an intrinsically valuable educational end, not as an exploitable means" (p. 20).

Komoski is, however, realistic about the time and training requirements of the reforms he is proposing. He notes that, "neither teachers nor administrators have information or information/management tools equal to the job society is expecting them to do" (p. 24). He continues, "a major implication of these shifts in types and numbers of instructional options available to schools is the problem of sorting out, identifying, correlating, and effectively using the most relevant of these options to fill a particular instructional need in a school's curriculum" (p. 25).

Finally, in the last few pages, not even hinted at before that point, Komoski's purpose becomes clear. He could have labored less in supportinghis arguments and still have convinced the reader to consider the merits of an integrated set of data bases which appear to be extremely beneficial in helping educators to make the reforms he has outlined. These databases, for which Komoski seems to have had a primary developmental responsibility, are entitled the *Integrated Instructional Information Resource* (IIIR), but are

referred to simply as the Resource. The Resource provides a comprehensive, evolving set of curriculum descriptors to support a school's work in designing or revising its curriculum purposes, goals and objectives. These descriptors may be used as an aid to:

- building locally developed curricula. By using this adaptable set of descriptors on a special curriculum design spreadsheet, curriculum committees can explore "what ifs" and continually order and reorder a school's curriculum, subject area, grade by grade;

- analyzing, and comparing the subject matter content, and the cognitive processes embedded in textbooks, other learning materials and tests to the content and processes called for in a school's curriculum;

- documenting and tracking the evolution of curriculum thinking and practice over time within a district, a state, or across states;

- using state and nationally recommended curriculum standards to inform local curriculum development; and

- accessing information concerning the need to assess how well a school's curriculum goals are beingmastered by learners (e.g., information about relevant norm-referenced and criterion-referenced tests) providing a structure for accessing, correlating and aligning test information with a school's curriculum goals, its materials, and nonmatierals-based teaching strategies. (pp. 27-28)

The Resource can also aid in:

- accessing information on mediated learning experiences ranging from textbooks and the proliferating array of other instructional materials (computer-based, video-based, and print-based), to the increasing numbers of integrated systems, some of which combine computer-aided instruction and management with print and other media; and

- accessing information about nonmaterials-based learning experiences and about the ways teachers can organize use of materials to go beyond their obvious uses. This function includes such things as teacher-generated strategies, student studies of nature, local government, their own behavior, as well as having students carry out useful projects with their school and local community (p. 28)

In addition, creators of the Resource have developed a network of cooperating teaching-traininginstitutions to encourage the use of the Resource among pre-service teachers and practicing teachers. There is interest in finding ways in which the Resource may be useful to parents as a way to become more informed about their child's formal education and how they can support efforts at home.

Komoski's criticisms seem unduly harsh at times and his generalizations far too sweeping, but the basic premises which he argues have been reiterated by countless others. Much of what he describes must ring true with those who have spent time in American schools where countless numbers of students spend much of their school day occupied with uninteresting, often trivial busywork; where the effectiveness of the teacher is often evaluated primarily on whether or not students are seated and quiet. Educators from countries other than the United States must judge whether Komoski's comments are appropriate to practices in their schools.

Komoski's views were quite clear long before he chose to free the reader from the continuation of his arguments; a briefer account would have been welcome. Instead, a discussion of the many existing examples of American schools which have worked toward the reforms that Komoski promotes would have been more interesting. Information about schools which have already made use of the Resource would have lent even more credibility to what appears to be a most useful resource.

REVIEWER

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