DOCUMENT RESUME

ED 313 806 EA 021 490

TITLE	"Restructuring" Schools: Integrating the Curriculum.
INSTITUTION	Northwest Educational Service District 189, Mount Vernon, WA.
PUB DATE	Dec 89
NOTE	16p.
PUB TYPE	Information Analyses (070) -- Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Change Strategies; *Educational Change; *Educational Improvement; Educational Quality; Elementary Secondary Education; *Integrated Curriculum
IDENTIFIERS	*Educational Restructuring

ABSTRACT

Integrating curriculum is one of the key school improvement activities being undertaken in the process of "restructuring" schools. Reviewed are materials on integrating curriculum that have been entered into the ERIC system in the 1980s, as well as documents from other instate and regional sources. The meaning of "restructuring" is defined, and curriculum revision is determined to be a major component of the restructuring process. A review of materials entered into the ERIC system reveals that curriculum integration is interpreted in three ways: (1) the integration of subareas within a single traditional subject area; (2) the integration of two (or more) related subject areas; and (3) the infusion of new curriculum into existing courses or subject areas. A few ERIC entries in the 1980s describe programs that first identified desired core competencies and then built a major part of the curriculum around them; that is, core curriculum programs. A few documents recently entered in ERIC provide specific advice about how to develop comprehensive, overall integration of curriculum as well as provide annotated lists of integrated curriculum projects and interdisciplinary projects across the nation. Documents and articles in ERIC through June 30, 1989, focus primarily on the regressive influence of current standardized testing on curriculum revision and the deleterious effect of tracking children into special education or other groupings that isolate them from mainstream curriculum and learning opportunities. (56 references) (SI)

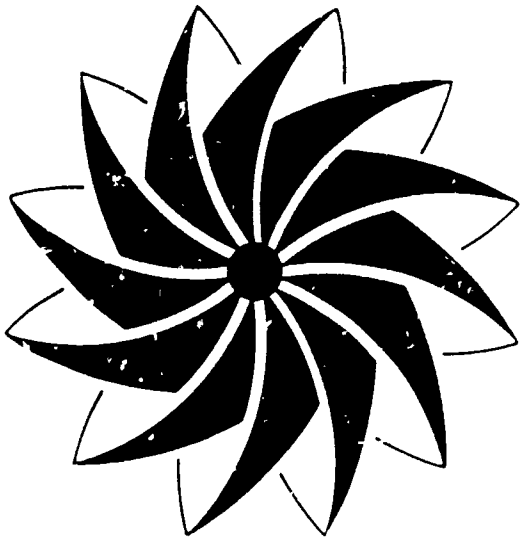
NORTHWEST ESD 189

NORTHWEST EDUCATIONAL SERVICE DISTRICT 189

205 Stewart Road
Mount Vernon, Washington 98273
(206) 424-9573

"Restructuring" Schools:

INTEGRATING THE CURRICULUM



Produced by
The Research Center

December 1989

INTEGRATING THE CURRICULUM

Educational reformers, in our state and nationally, consider integrating curriculum to be one of the key school improvement activities which should be undertaken in the process of "restructuring" schools. The integration process appears to show great promise for revising what some believe is increasingly obsolete curriculum in most schools. This research summary will review materials on this topic which have been entered into the ERIC system in the 1980s, as well as documents from other in-state and regional sources.

The New Dilemma in School Reform

"School improvement plans that set out to raise standards, increase accountability, improve student achievement test scores, and increase teacher pay were a good start but are not enough," say Sally N. and Donald Clark, professors of education at the University of Arizona, Tucson. They quote Michael Cohen, associate director of educational programs for the National Governors' Association, who suggests that "school improvement plans do a very good job of beginning to change the culture of the school...(but) rarely get to fundamental curriculum, instruction or other structural issues." In typically graphic form, Albert Shanker, President of the American Federation of Teachers, grees, in the February 1989 Education Digest: "In the last five years of education 'reform', almost all of our leadership efforts have gone toward upgrading the system already in place...(but) we still expect youngsters in school to cope with a structure that no worker in the real world would be saddled with. They're put into a room to work with 30 or more of their peers, with whom they cannot communicate. The teacher gives them their tasks, and, when the bell rings 40 or so minutes later, they have to gather up their belongings and head to another 'work station' for a whole new set of tasks with a new 'supervisor' who has a different personality and, very likely, a different method of operation. This routine is repeated six or seven times a day."

The increasingly common answer to these criticisms is what some call the "second wave" of school reform -- "restructuring."

Definitions of "Restructuring"

What does "restructuring" mean? Literature on the current video/teleconference series, "Restructuring to Promote Learning in America's Schools" (NCREL/PBS) defines it as "a fundamental re-examination of the basic goals, purposes, functions and structure of education in this country." The Northwest Regional Educational Laboratory's Center for State Education Policy Studies says most "restructuring proposals are grouped into three general categories: curriculum and instruction, governance and finance, and empowerment and choice." Barry Raebeck and Charles Beegle of the University of Virginia, Charlottesville, propose another definition, saying that the current school organization model must

be replaced with a "synthesystem," an organizational system "in which the energies, expectations and creative processes of thegroup are synthesized in a harmonious manner." Ken Michaels, Supervisor of Human Resource Development for the Dade County (Florida) Public Schools, spells out the following "exciting and markedly different agenda" for "restructuring" schools:

"1. The individual school as the unit of decision-making

2. Development of collegial, participatory environment among both students and staff members

3. Flexible use of time

4. Increased personalization of the school environment with a concurrent atmosphere of trust, high expectancies, and a sense of fairness

5. A curriculum that focuses on students' understanding what they learn -- knowing 'why' as well as 'how'

6. An emphasis on higher-order thinking skills for all students"

Others distill more specifically defined propositions from discussions of "restructuring." Thomas Payzant, superintendent of San Diego City Schools, writes in the October 1989 American School Board Journal, "On the basis of what we know about how children learn, it's good sense to give teachers the power to decide how their school is run, and the flexibility to choose from a broad repertoire of teaching techniques -- and then hold them accountable for the results." "Real reform requires that parents and other community members be given a genuine voice in the operation of local schools and a choice of public schools in which to enroll their children," writes Herbert J. Walberg et al in a description of "Chicagoans United to Reform Education" in the June 1989 Phi Delta Kappan. And in the article cited above, Shanker zeros in on the "need to search for structures and strategies that will reach the vast majority of students who fail or achieve at a low level in the current system." The over-arching themes of restructuring seem to be: integration, holism, interdependence, collaboration, inclusion, connectedness and patterns.

In our own state, the Washington Roundtable, the Washington Education Association and the Citizens Education Center Northwest, to name a few, have all echoed this theme also. "Restructuring means merging separated curricular elements into a more logical whole and participatory management based on delegation, involvement and empowerment of teachers," says the Roundtable in its document "Creating Exceptional Public Schools for the Next Century." "A new emphasis on competence rather than credits...should lead to a review and revamping of the curriculum, a greater emphasis on interdisciplinary approaches to learning and the development of meaningful performance indicators by which achievement of the core competencies can be evaluated."

Then-President of the Washington Education Association, Terry Bergeson, speaking last summer about the WEA's report on "Restructuring Public Education: Building A Learning Community," stressed cooperative learning and a new role for teachers as "managers of the learning environment," teaching students "how to learn, not just what to learn," increasing students' ability to process and apply information, thus integrating teaching and learning activities more closely. The Citizens Education Center Northwest announced a "Restructuring Project" last summer "to initiate a dialogue...to enable discussion and debate on educational issues relevant to restructuring and to connect to each other all of those individuals working...to restructure educational programs." The Center cited such "innovative" ways of redesigning programs as "integrating curriculum to provide a meaningful context for the acquisition of skills and information."

Zeroing in on Curriculum Integration

In the November 1989 Phi Delta Kappan, Leslie Hart incorporates some of the major themes of the "restructuring" thrust in a discussion of "what needs to happen to curriculum:" "How to find information, organize it, evaluate it, and apply it -- these critically important competencies have been lost...To operate from new understanding of how the brain works requires many changes in conventional ways of keeping school...The first step is to recognize and act on the key fact that THE BRAIN IS THE ORGAN FOR LEARNING...we now have a clear grasp of the conditions that we need to create in schools if we are to foster brain-compatible learning...let me suggest a few specifics.

1. WORKING FROM THEORY (as the best way to identify "what is likely to help learning")

2. NOT TEACHING CONTENT IN BITS...Brain-based learning theory instead emphasizes PATTERNS (understanding how parts inter-relate) and PROGRAMS (the ability to perform tasks in realistic situations.)

3. NOT TEACHING IN BLOCKS OF TIME...Learning advances not by small, fragmented jerks -- but as a flow of experience, exploration, and integration..."

Equally interested in curriculum revision as a part of the "restructuring" process, many of the 21 Washington State "Schools for the 21st Century" selected for funding by the State Board of Education in 1988-1989 included "interdisciplinary," "restructured" or "integrated" curriculum as a component of their projects.

Most Common Forms of Integrated Curriculum

A review of materials entered into the ERIC system in the 1980s reveals that they interpret "curriculum integration" in three major ways:

1) The integration of sub-areas within a single traditional subject area, such as "integrated language arts," "whole language" reading programs, the proposed integration of geography into a social studies curriculum, or "unified arts programs." Descriptions of such projects as "helping secondary English teachers integrate literature study and composition instruction" or "addressing the holistic goal of developing enlightened citizenship" as a new thrust in social studies may indicate the extent to which fragmentation of curriculum has affected at least some schools -- to such a degree, in fact, that what formerly and logically were integral parts of the same subject area are now seen as new areas to be integrated.

2) The integration of two (or more) related subject areas, such as science and mathematics or art education and and language arts (including, for instance, the "appreciation of books"), or social studies and humanities.

3) The infusion of new curriculum into existing courses or subject areas, such as "integrating the arts into the general curriculum," teaching "economics education across the curriculum," "incorporating thinking skills activities" into social studies (or other) curriculum, "integrating communication across the curriculum," and "infusing multicultural education into the existing curriculum" (e.g. "multicultural lessons dealing with numerals, abacus, calendars and money exchange were implemented successfully into a mathematics unit"). Descriptions of programs infusing "global education" into social studies and "oral communication into the English classroom" again reveal considerable existing fragmentation in at least some schools -- and an earnest desire once again to re-connect what has become disconnected.

Core Curriculum Programs

A few ERIC entries in the 1980s describe programs which first identified desired core competencies and then built a major part of the curriculum around them. One example in ERIC is the Jefferson County, Colorado Primary Integrated Curriculum, in which "a common set of learning outcomes and activities satisfies the content and process requirements for science, social studies, health, environmental education, and career education, and at the

same time reinforces the listening and speaking skills of language arts...The program developers...set as their developmental aims a curriculum that would:

> Respect the priority of basic skills at the 1st and 2nd grade levels...
>
> Deliver the content of social studies, health, science environmental education, and career education in a holistic fashion...
>
> ...systematically reinforce the cooperative learning skills advocated in Learning Alone and Together (D. Johnson and R. Johnson, 1974)...
>
> Introduce and give practice in the skills of problem solving and critical thinking.
>
> Use three basic teaching techniques: the informative approach...the discovery approach...and the experiential..."

Learning units in the Primary Integrated Curriculum include activities such as Sidewalk Safaris," in which "students take five sidewalk excursions to become acquainted with the school neighborhood. They meet the school neighbors both by chance and appointment and interview them on the jobs they do...(based on USMES, Educational Development Center, 1977)"

Other schools have implemented teaching projects which draw on many subject areas simultaneously. Some 60 such integrated projects, for instance, are suggested and introduced in the popular ThinkAbout instructional video series (elementary level), produced by the Agency for Instructional Television (now Technology) in 1980 and now available through ESD film/video libraries and PBS stations.

Suggestions for Implementation

Lonnie Pithan, Curriculum Coordinator at Northwest ESD 189, identifies the major goals of curriculum integration as a) encouraging "the kind of learning that makes sense -- connected learning," b) teaching students to be independent learners, and c) team planning for curriculum improvement. To this end, Northwest ESD 189 is offering a series of workshops through its staff development cooperative this year (1989-1990), to assist schools in integrating curriculum. The topics and resource persons are:

> A View of an Integrated Classroom, K-12
> Carolyn Bronson
>
> Integrating Language Arts: Writing to Learn, K-12
> Louise Lowry and Jill Andrews

Art Plus: Integrating the Visual Arts, K-12
Kathy Hastings

Discipline: Winning at Teaching, K-12
Barbara Coloroso

Social Studies: Signpost of the Future, 3-8
Merrill Thompson

Making Connections: Reading, Literature and the World of Learning, K-12
Nancy Johnson

Instruction Technology, K-12
Pat LaBlanc

A few documents recently entered in ERIC provide specific advice about how to develop comprehensive, overall integration of curriculum, not necessarily identifying the segments of curriculum to be integrated, but discussing "how to teach process skills rather than isolated facts and skills and how to make connections across the curriculum," to quote one of them, "Interdisciplinary Learning: A Resource Guide. A Small Place to Begin," from the Colorado Department of Education (1987). This document begins with a straightforward rationale for integrating curriculum. "The need for comprehensive integration or interconnection," say the authors, "is becoming more and more obvious as we enter full swing into the information age...As we consider the fact that...it is predicted that by the year 1990 knowledge will increase 100% a year, it becomes clear that the acquisition of facts will no longer provide a solid basis for education necessary for those living in the year 2000...Research on the development and specialization of the brain has opened new doors to understanding how we learn. We know now that learning is a wholistic experience; seeing connections and patterns is a vital part of that experience." Therefore, what we must teach children is not just information itself, but rather the skills needed to select, evaluate and use information out of the vast amount available which may be relevant to a particular task or question.

"Without the ability to make connections and see patterns, children can add and subtract and can't make change; can name the capitol cities of all the states and have no idea which states border Colorado; can name and identify the parts of speech and rules of punctuation and capitalization and yet can't write something worth reading...In other words, it is important for the student to have the 'whole' of the experience, the underlying understanding of what is to be accomplish -- the process -- before specific content has meaning and relevance."

The Colorado authors believe that the essentials of learning, the skills and processes which students must master, include the ability to use language, communicate effectively, reason logically, use abstractions and symbols "with power and ease," use mathematical and scientific knowledge and methods to solve problems, understand other languages and cultures, make informed

value judgments, understand spacial relationships, express oneself through the arts, and apply knowledge about health, nutrition and physical activity. In order to provide these essentials, "all disciplines must join together and acknowledge their interdependence."

The authors provide a progression of charts, from "Interdisciplinary Programs" at the initial stage of integrated curriculum development, through "Core Curriculum" and "Activity Based Program to the ultimate goal "Integrated Curriculum" in which:

> "Processes are seen as underlying foundations for the acquisition of knowledge.
>
> Teacher is a facilitator.
>
> Students make connections...
>
> Emphasis is on student use and application of knowledge."

The structure of the integrated curriculum is "student focused," curriculum is "written as a unified whole," and the school day is restructured "by (the) needs of students and learning."

"One of the major shifts that occurs when moving from the traditional classroom to an integrated approach," the authors explain further, "is the shift from a teacher focused classroom to a student focused classroom -- a shift from what is taught to what is learned." Another result is that "because the interconnections become so intricate and involved, it is impossible to deal with them within strictly enforced time periods." Hence, flexibility is required in scheduling.

The Guide continues with an annotated list of some 12 integrated curriculum projects in Colorado and includes also an annotated list of interdisciplinary projects across the nation identified by an ERIC search at the time of the Guide's publication. Suggestions and recommendations for schools initiating the changeover to an integrated curriculum include the following:

"* Start small and don't be afraid to take risks.

* Read and share articles about interdisciplinary education with staff members.

* Talk with other staff members about what you are already doing with an interdisciplinary focus.

* Involve other staff members in collaborative thinking, planning and problem solving...

* ...Be aware the change process is slow. Don't feel that everyone has to be in the same "frame of mind" before a project can be started.

* Provide for adequate planning time when developing units.

* Visit programs in other schools...

* Discover and utilize basic connections as you plan and identify ideas. Commonalities should be authentic, not forced.

* Think about processes rather than specific subjects.

* Organize around major themes which go beyond content areas...

* Plan teaching strategies to include variety (role playing, dramatization.)

* Search for ways to move the walls of the classroom outward to remove the physical barriers to learning as much as possible.

* ...Be sure you can answer these questions: What do I want a student to gain from this activity? What specific skill, process or subject matter is the student learning from this activity? Relate your interdisciplinary work to the present curriculum whenever possible -- AND write this all down so it becomes a matter of record.

* Put the burden of learning on the students...

* Provide opportunities for students to teach each other, correct each other's papers, respond to each other's learning process.

* Remember the importance of PR work..."

Selected items from the Guide for Evaluating Materials are:

"* Material is presented in a process manner or is process oriented, that is, it is seen as part of a whole rather than an isolated fact, idea or concept.

* Materials open options rather than narrow choices...

* Long range and short range goals...are focused on what students should do rather than on what students should know or teachers should teach.

* Opportunities for synthesis of information or connections among information are provided rather than a focus on isolated knowledge as an end in itself.

* Opportunities for follow up are an integral part of the materials/staff development.

* A process rather than linear steps is provided for completing tasks.

* Resources are provided for further investigation and to find answers to questions generated.

* Opportunities for multi-task implementation exist to meet different kinds of learning styles -- choices and options abound.

* Applications to real life situations are a focus, not a tacked-on afterthought."

Some Areas of Concern

Many local needs and concerns will be raised in relation to changes as sweeping as those proposed above. Documents and articles in ERIC through June 30, 1989, focus primarily on a) the regressive influence of current standardized testing on curriculum revision and b) the deleterious effect of tracking children into specially education or other groupings which isolate them from mainstream curriculum and learning opportunities.

The major complaint about standardized tests is their fragmenting influence on curriculum. The following are representative samples of that perspective.

Lorrie A. Shepard, in the April 1989 Educational Leadership, points the finger at tests "which don't measure a respondent's ability to organize relevant information and present a coherent argument." There is plenty of evidence, she notes, that "testing shapes instruction...(with resulting) endless drill and practice on decontextualized skills." In reality, she adds, "learners gain understanding when they construct their own knowledge and develop their own cognitive maps of the interconnections among concepts and facts...The practice of postponing higher-order thinking goals until low-level skills have been mastered is harmful...Assessment tasks should be redesigned -- indeed, are being redesigned -- to more closely resemble real learning tasks."
Likewise, Samuel J. Meisels, in the same issue, writes, "This phenomenon, known as 'measurement-driven instruction,' (Madaus, 1988) transforms testing programs, ideally servants of educational programs, into masters of the educational process. The results are a narrowing of the curriculum, a concentration on those skills most amenable to testing...High-stakes achievement tests invariably narrow instruction and learning, focusing the curriculum on the content that will be included on a test...the final attribute of high-stakes testing...is the subtle transfer of control over the curriculum to the test developer." As G. F. Madaus (to whom Meisels refers here) puts it, "When the stakes are high, people are going to find ways to have test scores go up."

Advocates for eliminating the divisions between various groupings of students, or "tracks," include the following. Reacting to five papers presented at a 1986 conference, "Designs for Compensatory Education," Walter Doyle notes that "these papers suggest that the instructional designs typical of compensatory education fragment the educational experiences of students and, thus, fail to provide them with the coherent mental representations necessary to do schoolwork. This effect appears to be especially pronounced when students are grouped apart from their peers for remedial instruction."

Alan Gartner and Dorothy Lipsky, in a presentation at the Council for Exceptional Children's Topical Conference on the Future of Special Education (Orlando FL, 1987), declared, "Faults of special education include its medical view of disability, its arbitrary division of students into handicapped and nonhandicapped, and the resultant separation between general and special education...A new framework for education is needed, and it must focus on adapting instruction to individual differences to maximize common goal attainment...(recognizing) that individuals vary. Such a system requires adaptations in society and in education, not solely in the individual..."

The "second wave" or "restructuring" movement seems not yet to have reached full power, as more ramifications such as these emerge from discussions and proposals. The process of integrating curriculum, however, seems popular enough to result eventually in substantial changes in what and how children will be taught, perhaps because although advocates insist that integrating curriculum requires very fundamental changes in the way schools operate, still there are many first steps which not only can be made right now, but which are actually in process both in our own state and elsewhere.

- J. Newman
Northwest ESD 189

BIBLIOGRAPHY

Bowers, Bruce C., "Alternatives to Standardized Educational Assessment," ERIC Digest Series, ERIC Clearinghouse on Educational Assessment, 1989.

Brandt, Ron, "On Misuse of Testing: A Conversation with George Madaus," Educational Leadership, April, 1989.

Brunk, Valerie N. and Jon J. Denton, "Evaluation of a Sociomusic Curriculum for Young Learners," Texas Tech Journal of Education, Winter, 1983.

Fasching, Beverly A. and Judith I. Schwartz, Eds., "Integrating Language Arts in the Elementary School," National Council of Teachers of English, 1983 (ED238029).

Cadient , Ronalda, "Juneau Indian Studies Elementary Curriculum Guide, Grades K-5," Greater Juneau Borough School District, AK (ED288656).

"Celebrating Our 10th Anniversary," Center Point, Citizens Education Center Northwest, Seattle, WA, Summer, 1989.

Ching, Jackie, "School System Overhaul Proposed," The Seattle Times, June 24, 1989.

Cooper, Pamela J., "Oral Communication Across the Curriculum," Central States Speech Association, Indianapolis, IN (ED255960).

"Comprehensive Instructional Management System (CIMS) Communication Arts 1985-86. OEA Evaluation Report'" New York City Board of Education, Office of Educational Assessment (ED281177).

"Creating Exceptional Public Schools for the Next Century," Washington Roundtable, Seattle, WA, January, 1989.

Disinger, John F. "Environmental Education in K-12 Curricula," ERIC-SMEAC Environmental Information Bulletin No. 2, 1987 (ED293718).

Downey, Matthew T., "Time, Space and Culture," Social Education, November-December, 1986.

Doyle, Walter, "Vision and Reality: A Reaction to Issues in Curriculum and Instruction for Compensatory Education," Designs for Compensatory Education Conference, 1986 (ED293918).

Engle, Shirley H. and Anna Ochoa, "A Curriculum for Democratic Citizenship," Social Education, November-December, 1986.

Fagan, Edward R., "Interdisciplinary English: Science, Technology and Society," English Journal, September, 1987.

Fleming, Margaret, Ed., "Writing Across the Curriculum," Arizona English Teachers Association, 1984 (ED274991).

"Focus on Policy Making," Northwest Report, Northwest Regional Educational Laboratory, Portland OR, October, 1989.

Gartner, Alan and Dorothy Kerzner-Lipsky, "Beyond Special Education," Council for Exceptional Children Conference, 1987 (ED293233).

Gilbert, Judith E., Ed., "Interdisciplinary Learning: A Resource Guide, A Small Place to Begin," Colorado State Department of Education, 1987 (ED294189).

Goodman, Kenneth S. et al, "Language and Thinking in Schools: A Whole-Language Curriculum," Third Edition, 1987 (ED278987).

"Guidelines for Energy Education in Social Studies," Indiana Social Studies Quarterly, Winter 1982-83.

Hall, William D., "Gallatin History Past to Present: A Multi-Age, Integrated Subjects Curriculum Unit" (Also "Oceans" and "Outer Space" units), Gallatin County Superintendent of Schools, MT (ED269185, ED269184, ED269183).

Hanson, David, "WEA Plan to Reform, Update Schools Won't Do the Job," Seattle Post-Intelligencer, August 20, 1989.

Hartoonian, H. Michael and Claud Thompson, Eds. "Rethinking Social Education: Ideas and Recommendations from Wingspread," Wisconsin State Department of Public Instruction, 1983 (ED249125).

Kahn, Elizabeth A., "Writing About Literature," National Council of Teachers of English, 1984 (ED246486).

Kaufman, Mabel, "The Book as Art and Idea," Art Education, May 1983.

"Keepers of the Land. An Agricultural Curriculum for Kindergarten-Sixth Grade," South Carolina State Dept. of Education, 1986 (ED278-822).

Kindler, Anna M., "A Review of Rationales for Integrated Arts Programs," Studies in Arts Education, Fall, 1987.

Kniep, Willard M., "Social Studies within A Global Education," Social Education, November-December, 1986.

Madaus, G. F., "The Influence of Testing on the Curriculum," Critical Issues in Curriculum: 87th Yearbook of the National Society for the Study of Education, Chicago: University of Chicago Press, 1988.

Meisels, Samuel J., "High-Stakes Testing in Kindergarten," Educational Leadership, April, 1989.

Melle, Marge and Fern Wilson, "Balanced Instruction Through an Integrated Curriculum," Educational Leadership, April, 1984.

Michaels, Ken. "Caution: Second Wave Refor- Taking Place," Educational Leadership, February, 1988.

Murphy, Jerome T., "The Paradox of Decentralizing Schools," Phi Delta Kappan, June, 1989.

Nappi, Andrew T. and Anthony F. Suglia, Eds., "Economic Education Experiences of Enterprising Teachers," Volume 21, Joint Council on Economics Education, 1984 (ED244865).

Oxman, Wendy G. and Nicholas M. Michelli, "Project THISTLE: Thinking Skills in Teaching and Learning. A Model College-School Collaborative Program in Curriculum and Staff Development," Montclair State College, NJ (ED241514).

Passow, Harry A., "Curriculum and Instruction: Reactions," Designs for Compensatory Education Conference, 1986 (ED293917).

Payzant, Thomas W., "To Restructure Schools, We've Changed the Way the Bureaucracy Works," American School Board Journal, October, 1989.

Portmann, Brooke, Ed., "Minnesota Comprehensive Arts Planning Program. Implementation Manual, 1985-87, 1986 Amended Edition," Minnesota State Arts Board (ED290642).

Raebeck, Barry Scott and Charles W. Beegle, "The Secondary School Synthesystem: A New Organizational Model," NASSP Bulletin, March, 1988.

"Restructuring to Promote Learning in America's Schools" (brochure), North Central Regional Educational Laboratory and PBS Education Service, Autumn, 1989.

"Schools for the 21st Century," Project Abstracts, Washington State Board of Education, 1988.

Schug, Mark C., "Economic Education Across the Curriculum," Fastback 183, Phi Delta Kappa Educational Foundation,1982 (ED223503).

Shainline, Michael, "Program to Integrate Math and Science. Evaluation Report," Albuquerque Public Schools, NM (ED301415).

Shanker, Albert, "Restructuring Leadership," Education Digest, February, 1989.

Shepard, Lorrie A., "Why We Need Better Assessments," Educational Leadership, April, 1989.

Sipple, Jo-Ann M., "Interdisciplinary Connections among Writing Theories and Teaching Practices," Annual Meeting of the Conference on College Composition and Communication, 1987 (ED236694).

Spence, Carolyn and Carol S. Martin, "Mathematics + Social Studies + Learning Connections," Arithmetic Teacher, December, 1988.

Stanley, William B. and Jack L. Nelson, "Social Education for Social Transformation," Social Education, November-December, 1986.

Streff, Craig R., "The Role of Inner Speech in a Liberal Arts Curriculum," Speech Communications Association Annual Meeting, Boston, 1987 (ED291123).

Wagner, Betty Jane, "ERIC/RCS Report: Integrating the Language Arts," Language Arts, September, 1985.

Walberg, Herbert J. et al, "Restructuring the Nation's Worst Schools," Phi Delta Kappan, June, 1989.

White, Jane J., "Decision-Making with an Integrative Curriculum," Childhood Education, May-June, 1986.

Yao, Esther Lee, "The Infusion of Multicultural Teaching in the Classroom, Action In Teacher Education, Fall, 1984.

Zitlaw, Jo-Ann Bruce, and Cheryl Standish Frank,"Meet the Alpha-Pets," Instructor, August, 1985.

Zumwalt, Karen K., "Curriculum and Instruction: Reactions," Designs for Compensatory Education Conference, 1986 (ED293916).