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ABSTRACT

The following major activities are discussed to guide educators through the complexities of curriculum organization. The first, defining outcomes, includes: (1) exit outcomes that express broad educational goals; (2) unit objectives; and (3) lesson objectives. The second major activity, developing learning units, includes: (1) opening lessons; (2) initial instruction; (3) a nongraded formative test; (4) provisions for providing alternative learning activities for those students requiring additional help or enrichment material; and (5) a second administration of a parallel mastery test. The third major activity, aligning curriculum, has two interpretations. One interpretation of curriculum alignment is the coordination of curriculum documents; a second interpretation is "testing what is taught." The fourth major activity, managing the curriculum, requires a good management system that needs to be able to do several things: (1) identify when teachers have taught the learning units and which students have mastered each unit in the curriculum; (2) collect information from teachers that indicates particular units that need revision; and (3) use student learning data to provide information on areas of teacher expertise. Ways of initiating these activities are discussed. (MLF)

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Curriculum organization is a fundamental district and school activity in implementing outcome-based education. Because it can consume considerable energy, it is important that districts and schools address issues of curriculum organization efficiently and not impede the implementation of other components of outcome-based education. This OBE Bulletin discusses the concept of curriculum organization in outcome-based education and suggests ways that may help a school or district complete this activity.

CURRICULUM ORGANIZATION IN OUTCOME-BASED EDUCATION

Specifying learning outcomes is the starting point for curriculum organization in outcome-based education. Clearly defined, publicly-stated outcomes provide the focus for districts and schools to structure their curriculum. Although most districts have philosophy statements and scope and sequence materials as policy documents, in many cases they do not provide the necessary structure for the curriculum nor do they provide an adequate guide for teachers to plan instruction. Consequently, teachers resort to using what is available and useful to them, namely textbook objectives, textbook sequence, and textbook tests.

Defining useable learning outcomes, then, is a critical first activity. Once learning outcomes are outlined and organized, the next activity is to *adopt or develop* appropriate curriculum materials for those outcomes. It is easy to rely on textbooks to define curriculum. The real challenge is to go beyond the textbook and organize curriculum materials into learning units. Learning units outline topics for several weeks of instruction and specify ways the topics can be taught. Learning units are working documents that, in effect, collect the best pedagogical knowledge available in a school or district.

The third activity is to *align* the curriculum in two ways. First, the existing curriculum documents, from exit outcomes to lesson objectives, need to be consistent. Second, the curriculum should be aligned with the assessment instruments that the district uses to evaluate the effectiveness of its educational programs.

Alignment is not an easy task, primarily because there are often several sets of both curriculum documents and tests to be coordinated. For example, a district might have state frameworks and curriculum guides, its own district philosophy statements and scope and sequence documents, and textbook series to coordinate. With respect to testing, a district might be required to administer achievement tests from a state assessment program (based on a state-level framework or curriculum guide), also have a district-developed testing program (usually criterion-referenced and linked to district scope and sequence documents), and be mandated by the school board to administer a standardized achievement battery to provide state and national normative data. Figuring out what

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tests need to be aligned to which curriculum documents is often a confusing task.

A final activity is to devise a means of *managing* the curriculum. Not only does the implementation of learning units need monitoring, but formal procedures are also required for revising the curriculum based on teacher experience. As working documents, learning units should undergo revision as experience provides pedagogical knowledge about what works well with particular topics.

These four activities are discussed—defining outcomes, developing learning units, aligning curriculum, and managing the curriculum—in the remainder of this issue. A word of caution to readers: These four activities are not a recipe and do not include all the steps that a school or district might follow to organize their curriculum. This outline serves only as a map that can help guide one through the complexities of curriculum organization. The primary aim is to connect the general educational goals for students expressed in district and school philosophy and exit outcomes to the daily lessons students experience. We believe these four activities begin to accomplish this goal.

Figure 1
General Learner Outcomes for Township High School District 214

District 214 graduates will demonstrate:

- ☐ Verbal, quantitative, and technological literacy
- ☐ Skills in communication and group interaction
- ☐ Skills in problemsolving and group interaction
- ☐ Skills in expressing themselves creatively and responding to the creative works of others
- ☐ Civic understanding through the study of American culture and history
- ☐ Understanding of past and present culture
- ☐ Concern, tolerance and respect for others
- ☐ Skills in adapting to and creating personal and social change
- ☐ Capacity for enhancing and sustaining self-esteem through emotional, intellectual, and physical well-being
- ☐ Skills necessary to be self-directed learners

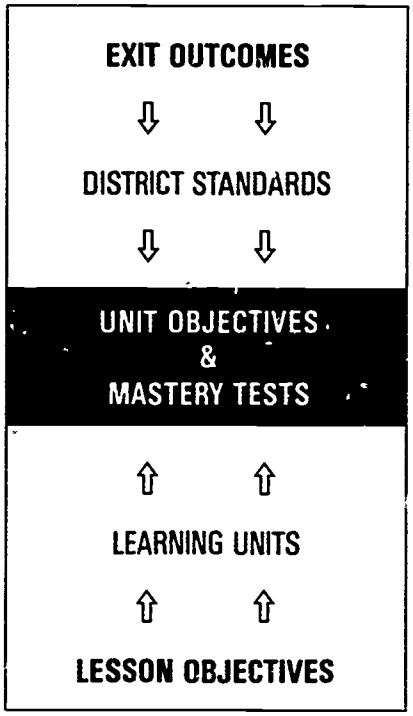
Defining Outcomes

Learning outcomes can be defined in several ways. At the secondary level, for example, a common organization would entail three levels: general learner outcomes, program goals, and course objectives. At the elementary level, it is common to place more emphasis on grade-level objectives. Three kinds of outcomes are defined here: exit outcomes, unit objectives, and lesson objectives. This classification distinguishes outcomes in terms of their breadth and specificity.

EXIT OUTCOMES. Exit outcomes express the broad educational goals toward which schools design their programs. Exit outcomes can be organized to correspond to the district's school organizations—for example, elementary, middle, and secondary—and usually reflect the district's philosophy about the types of learning it deems important. Such statements reflect cognitive, affective, psycho-motor and personal goals for learners. For example, Figure 1 presents the general learner outcomes for Township High School District Number 214 in the Chicago area.

The primary limitation of such statements is their generality. It is difficult to connect such statements to the day-to-day realities of classroom teaching. Teachers do not often think of exit outcomes; daily existence is caught up with subject areas—reading period is first, mathematics is second, and so on. It is important, therefore, that exit outcomes become connected to daily learning activities. District standards for subject areas is one way to help ensure that exit outcomes are addressed in each subject.

District standards define the content and cognitive processes for a subject area in a district. They help to explain and justify why topics are included in the curriculum. Subject area content is elicited by asking "What knowledge is important for students to have in this subject area?" In Red Bank Public Schools, for example, the reading/language arts committee defined seven content areas: reading; literature; writing; listening and speaking; rhetoric, logic and thinking skills, media production and analysis; and study skills. Subject area processes are elicited by asking "What are the general ways knowledge in this subject is discovered?" In Red Bank again, the reading and language arts processes



are based on recent research on effective strategies for teaching and learning communication skills.

Considerable work has already been done in the area of constructing district standards. Professional societies such as the National Council of Teachers of Mathematics and the National Council of Teachers of English publish articles about the structure of their disciplines. Content area experts, such as professors who publish textbooks on how to teach a particular subject area, usually define a structure for subject areas. Other sources include state frameworks, like those published by the California State Department of Education, model curriculum guides, statements of philosophy and exit outcomes from other districts, and teachers. Because the structure of a discipline changes slowly, district standards may have a life of 10 to 15 years.

District standards, then, are written descriptions of the general topics in the curriculum and the cognitive processes expected of students. They specify the rationale for including the topics in the curriculum. District standards are tied to the exit outcomes, using the language the district constructed for the exit outcomes. Since they help guide the specification of unit outcomes, the district standards provide a bridge from the more general exit outcomes to the more specific unit objectives.

UNIT OBJECTIVES. Unit objectives are the learning outcomes for a particular subject. Each subject area—mathematics, reading, language arts, science, social studies, foreign language, the fine arts, physical education, vocational education, and others—has its own set of outcomes guided by district standards. Collectively, these unit outcomes are written such that their attainment provides the basis for students to acquire the appropriate content and processes of the district standards and the broader exit outcomes.

Unit objectives represent two to four weeks of instruction. They are written at a level of specificity between lesson objectives and exit outcomes. Lesson objectives are useful for daily lesson planning but too numerous for program organization, while exit outcomes are useful as general goals but too broad to design subject area curriculum. Each subject area has between 10 to 20 units for a year.

Unit objectives are relatively complex and reflect the aspects of content and process mentioned in the district standards. For example, consider the following unit objective for fourth-grade reading in Red Bank:

We will practice comprehension by applying skimming/scanning techniques, by reviewing sequencing skills and by writing summaries based on the novel, *The Summer of the Swans*. We will respond to each other's summaries by suggesting strengths and areas of improvement.

This unit objective addresses district standards in four areas: (1) reading—skimming, scanning and sequencing, (2) literature—the novel *The Summer of the Swans*, (3) writing—producing and editing summaries, and (4) communication—providing feedback on strengths and areas of improvement. This unit objective is also related specifically to exit outcomes in literacy, cultural knowledge, and attitudinal outcomes.

Unit objectives should characterize a teacher's intuitive notion of what it means to master a complex set of concepts or skills. Writing unit objectives in this way helps avoid fragmenting the curriculum into individual skills and also helps to ensure that student mastery is demonstrated by the use of several concepts or skills and not just isolated skills out of context.

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One important feature of learning units is that they organize, in one place, the best pedagogical knowledge and materials available in the district to teach the unit objective.

LESSON OBJECTIVES. Lesson objectives are the objectives that make up the daily instruction of teachers. Lesson objectives guide the day-to-day teaching activities of a learning unit. Attainment of lesson objectives leads to mastery of the unit objective.

A task analysis of the unit objective will generate the lesson objectives. A task analysis is completed by asking "What component skills or concepts does a student need to possess in order to achieve the objective for the unit?" Answering this question will quickly generate the lesson objectives and suggest a likely sequence for presenting the lesson objectives during the learning unit. Although lesson objectives are important, they should not take precedence over unit objectives. Lesson objectives are best thought of as skills and concepts that enable students to master the unit objective and are necessary only in so far as they assist the student with the unit objective.

GETTING STARTED. To get started in defining outcomes, three tasks are often helpful. First, establish a district committee to examine existing statements of exit outcomes and develop one of its own. This is not an easy task. Developing an exit outcome document forces a district to focus directly on the purpose and philosophy of education and to examine its own, often unspoken, assumptions about what education should be in society. It also focuses attention on the curriculum and begins to lay a foundation for future curriculum work.

Second, describe the curriculum that is currently used in the district by asking teachers to outline 10 to 20 units of instruction in each subject area. A unit of instruction can initially be defined as a chapter in the textbook or the curriculum taught between major tests. Teachers can describe each unit of instruction by giving a title to the unit, such as "America After the Civil War" or "Three-Digit Subtraction With Carrying." Teachers might also use task analysis procedures to list three to five lesson objectives students would master during the instruction. Department chairpersons on the secondary level, and grade-level leaders on the elementary level, can work together with their principals to organize and collate the instructional descriptions.

Third, form subject area committees to develop district standards. Master teachers can play a leading role in these committees. The principal might also be included on at least one subject area committee so that he or she would be familiar with the development process. Participation by principals is important because they will ultimately be responsible for assisting teachers in reaching unit objectives in all areas of instruction.

Developing Learning Units

Learning units organize two to four weeks of instruction. Although there are many ways to organize units, all mastery learning units contain five components: (1) opening lessons to set the stage for later learning, (2) initial instruction, (3) a non-graded formative test to identify masters and non-masters, (4) provisions for providing alternative learning activities for those students requiring additional instruction (non-masters) and those students requiring extension activities (masters), and (5) a second administration of a parallel mastery test.

One important feature of learning units is that they organize, in one place, the best pedagogical knowledge and materials available in the district to teach the unit objective. As teachers gain experience with a unit, the techniques that work best for particular lessons can be incorporated into the unit. One way of thinking about learning units, then, is as the written, collective intelligence of a district on teaching.

A second important feature is the formal mastery testing and correction procedures. These critical procedures provide teachers with the information necessary to target instruction effectively. While it is true that good teachers regularly monitor student learning informally and adjust their teaching accordingly, the mastery testing and correction procedures ensure that no student's progress goes unnoticed. The mastery testing process also provides data on student learning which are useful for curriculum revision.

GETTING STARTED. Teachers design and develop learning units. It is important, therefore, that teachers understand the philosophy and practice of mastery learning and outcome-based education before

being asked to develop units. A solid conceptual understanding is usually prerequisite to teacher commitment.

A second task is the writing of learning unit specifications. Learning unit specifications provide teachers with a model or guide for developing and organizing lessons into a unit. Specifications often include definitions and examples of different unit elements, questions to address in each unit, and suggested formats for outlining unit materials. In Red Bank, for example, the unit specifications address thirteen elements: mental set; rationale; objective; prerequisite skills; task analysis; parent activities; input; guided practice; independent practice; formative test; correctives; extensions; and mastery test.

The final task is actually writing the units. This is a difficult, time-consuming activity requiring district support for teachers in the form of release time, summer stipends, and common planning time for collegial work. Districts can also arrange to share units among themselves so that work is not duplicated. It is important to maintain realistic expectations, however. Learning unit development is a long-term activity and districts must find ways to compensate teachers for their efforts.

Aligning Curriculum

There is no doubt that the term *curriculum alignment* has come to mean different things among educators. Two interpretations of curriculum alignment that are important to curriculum organization in outcome-based education are discussed here and ways of applying them are outlined.

One interpretation of curriculum alignment is the coordination of curriculum documents. In outcome-based education, this means that exit outcomes, district standards, and unit objectives are consistent with each other. A curriculum committee needs to address the following questions:

- Do the district standards reflect the exit outcomes?
- Are the district standards comprehensive enough to include all appropriate unit objectives?
- Do the unit objectives contain the content and processes specified in the district standards?
- Do the unit objectives support the exit outcomes?

Answering these questions will likely uncover inconsistencies and holes in the curriculum documents that should be addressed. Building curriculum consistency, then, is one way of aligning curriculum.

A second interpretation of curriculum alignment is "testing what is taught." Testing what is taught requires a district to use tests that closely match the curriculum that has been implemented. Analysis of commonly-used textbooks and achievement tests reveals a lack of overlap between textbooks and tests. For example, in a fourth-grade mathematics study by Donald Freeman and his colleagues at the Institute for Research on Teaching at Michigan State University, topics covered in each of four textbooks and five standardized tests were carefully examined. Table 1 presents the percentage of tested topics covered in each textbook for those topics represented by at least 20 mathematics problems in a book.

Table 1
Percentages of Tested Topics Covered in Each Textbook for Fourth-Grade Mathematics

Test	Textbook			
	Addison-Wesley	Holt	Houghton Mifflin	Scott, Foresman
MAT (38 topics)	32	50	40	42
Stanford (72 topics)	22	22	21	22
Iowa (66 topics)	26	29	32	26
CTBS-I (53 topics)	32	32	38	36
CTBS-II (61 topics)	28	38	38	34

Note: Adapted from Freeman, Kuhs, Porter, Floden, Schmidt, and Schwille (1983)
Percentages are based on topics covered by at least 20 problems in a book.

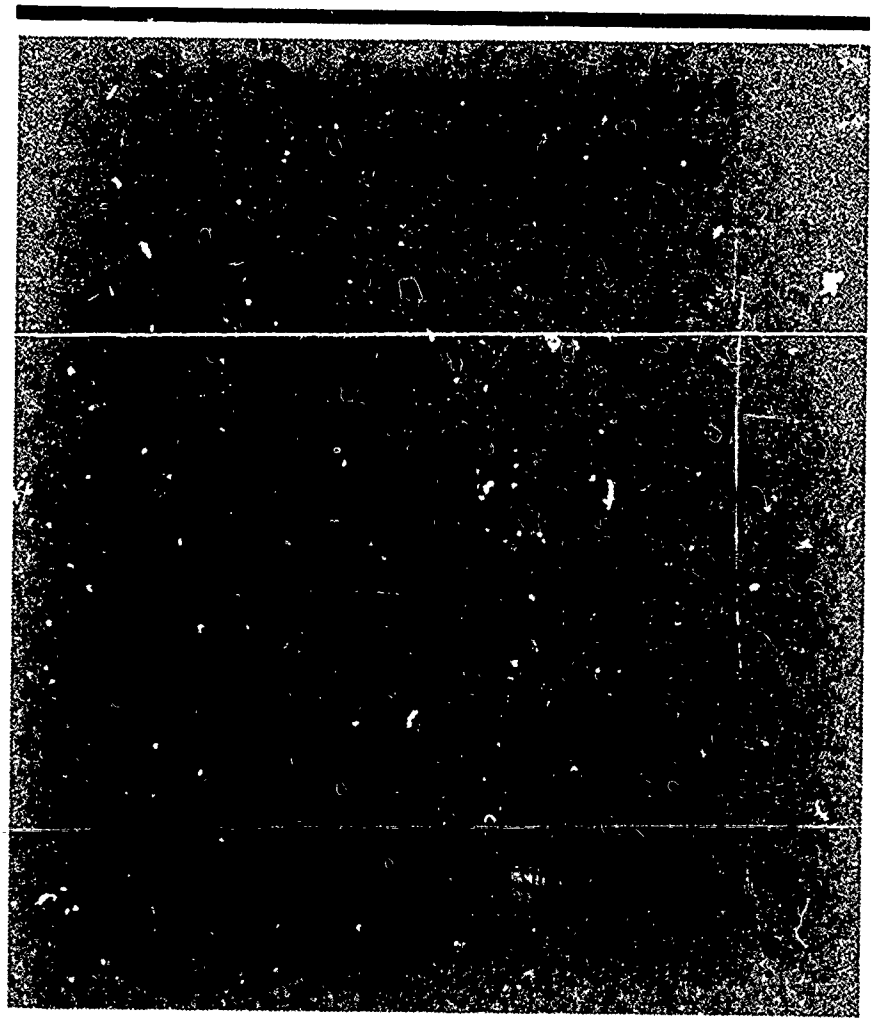
Test-textbook correspondence ranged from a low of 21 percent to a high of 50 percent. In the worst situation, a district using the Stanford Achievement Test with the Houghton Mifflin mathematics textbook, the achievement test measured only 21 percent of the topics covered in the textbook. Even in the best situation, a dis-

While it is true that good teachers regularly monitor student learning informally and adjust their teaching accordingly, the mastery testing and correction procedures ensure that no student's progress goes unnoticed.

trict using the Metropolitan Achievement Tests with the Holt mathematics textbook, the achievement test still only measured 50 percent of the topics covered in the textbook.

Clearly a school or district's test results are dependent, in part, on the particular combination of textbook and test used. More importantly, the accuracy of the test scores as indicators of topics learned by students is adversely affected when there is little correspondence. If only 20 to 50 percent of the curriculum taught is being tested, then the test scores reflect more of what students already know (ability) than what students have been taught (achievement).

A second purpose of curriculum alignment, therefore, is to increase the validity of test scores and improve their usefulness. In other words, an aligned curriculum is organized so that test scores reflect what has been taught. Test scores then provide useful information about the effectiveness of the instructional program.



Some educators erroneously think of curriculum alignment as a shortcut to instructional improvement. While it is true that test scores often increase when curriculum and tests are brought more into alignment, it is a one-time increase that has nothing to do with better instruction. An aligned curriculum merely allows the test scores to accurately reflect what is being learned by students.

Other educators believe that tests should dictate the curriculum. They start with the test and define the curriculum as that covered in the test. Although in some cases a district may reasonably decide that the topics covered in a particular test are in fact the elements that should be included in the curriculum, it is more defensible to first define the curriculum and then select or construct the test that measures the curriculum specifications. District standards, not test publishers, should guide decisionmaking.

Typically, a district's curriculum alignment must be adjusted. Changes in tests, textbooks, objectives, district standards, and exit outcomes throw the system out of alignment to some degree. With the curriculum organized into learning units, however, the realignment process may be easier. Realignment can be based on learning unit objectives rather than lesson objectives. Unit objectives are easier to manage because curriculum committees are not overwhelmed by hundreds of possible lesson objectives every time realignment is necessary. Learning units and unit objectives are manageable building blocks for curriculum organization.

Managing the Curriculum

Implementing a complete scope and sequence of learning units can be facilitated by a good management system. A good management system needs to be able to do several things. First, information is needed on when teachers have taught the learning units and which students have mastered each unit in the curriculum. Second, teacher experience with the curriculum will indicate particular units that need revision; the management system should provide a way of collecting this teacher information and acting on it. Third, student learning data can provide information on areas of teacher expertise

in the district. A good management system can use this information to suggest a staff development strategy that capitalizes on teacher expertise. Methods for each of these three management tasks are discussed below.

The first task of a management system is to *monitor* the implementation of learning units. The school principal can be responsible for this monitoring. In Red Bank Public Schools, for example, the principals ask each grade level at the beginning of the school year to specify approximate dates when the unit tests will be given during the year. The principal then follows unit implementation and student achievement on unit tests. This monitoring provides useful information for future curriculum planning since a good record is maintained of what units were or were not mastered by students.

A second task of a management system is *curriculum revision*. Curricula need to be refined and updated yearly so the learning units reflect what teachers learned about the teaching of the unit. The curriculum committee that produced the district standards might meet once a year to review the learning units at each grade level. District standards can be used to screen suggestions and make recommendations for deletion or addition of units. The curriculum committee can also recommend, on the basis of input from the principals, where district-wide needs exist so that appropriate coordination of staff development activities can take place for the following year. Such activities might involve planning a new instructional unit, implementing a new instructional strategy, or gathering data on an area of curriculum which needs to be improved. By following such a process, the curriculum becomes the yearly plan for the district.

Every five to ten years the committee needs to review and update the district standards to insure that the standards are still congruent with recent research, with the best instructional practice, and with emerging conceptions of what is appropriate to teach in schools. For example, the recent call for computer literacy has necessitated the introduction of a new subject area into the curriculum. By reviewing district standards for each subject area, staff can make decisions about how computers should be used. Thus the district's curricula can evolve in an orderly and manageable way while assuring that the best of past practice is incorporated in present instruction.

A third task of a management system is to *provide information for staff development*. When student learning data are routinely collected, the district staff development program can be tied directly to improving

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Table 2
Number of Students Mastering, Passing, and Not Mastering Learning Units in Sixth-Grade Mathematics

		Teacher											
		1			2			3			4		
Unit Number	Unit Title	M	P	NM	M	P	NM	M	P	NM	M	P	NM
6.01	Whole Numbers	5	14	3	7	7	4	15	2	1	10	5	1
6.02	Place value and numeration	12	9	1	11	8	0	10	6	2	9	5	2
6.03	Addition/subtraction of decimals	14	7	1	12	7	0	8	11	0	7	8	1
6.04	Multiplication of decimals	9	11	2	8	11	1	8	11	0	7	6	3
6.05	Division of decimals and review	2	17	3	1	17	2	11	8	0	14	2	0
6.06	Decimal summary	3	17	2	7	12	1	12	6	1	8	7	1
6.07	Addition/subtraction of like fractions	10	8	1	7	13	0	9	9	1	6	6	4

M = Mastery (Score of 90% or better); P = Pass (Score of 70%–89%); NM = Non-Mastery (Score of less than 70%)

instruction in particular learning units. Table 2, for example, presents data from Red Bank. These data present the number of students mastering (a score of 90% or better), passing (70% to 89%), or not mastering (less than 70%) the first seven of sixteen sixth-grade mathematics units for four teachers. Since classes are formed heterogeneously and the four teachers use the same unit tests, the data can be used to identify those teachers with exceptional skill in teaching certain learning units.

For example, careful examination of the data will reveal that Teacher 3 has much greater success with Unit 6.01 (Whole Numbers) than the other three teachers. In effect, Teacher 3 is the expert pedagogue in the district for this particular unit and could, if supported by a staff development program, share this expertise with the other teachers. It also turns out that each teacher is an "expert pedagogue" in at least one of the learning units. By using this information as the basis of a staff development program, a district can draw upon the best available knowledge in the district and allow teachers the opportunity to share that knowledge with their colleagues. Other patterns of success may surface as data for several years are examined together.

Summary

These four activities—defining outcomes, developing learning units, aligning curriculum, and managing the curriculum—help to organize curriculum in outcome-based education. By attending to curriculum organization efficiently, it is hoped that districts and schools can move into issues of instructional organization (see Burns, 1987) and begin to realize the full potential of outcome-based education.

References

Burns, R. (1987). *Models of instructional organization: A casebook on mastery learning and outcome-based education.* San Francisco: Far West Laboratory for Educational Research and Development.

Freeman, D., Kuhs, T., Porter, A., Floden, R., Schmidt, W., and Schwille, J. (1983). Do textbooks and tests define a national curriculum in elementary school mathematics? *The Elementary School Journal*, 83, 501-513.

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OBE News, Activities, and Resources

Charlotte Danielson, of Outcomes Associates, will be publishing a newsletter called *The Exchange*. The newsletter will be a clearinghouse of practical ideas for educators implementing outcome-based education. Brief articles will describe school and district practices in curriculum, instruction, building-level planning, learning support, information management, communication, and staff development. *The Exchange* will appear five times a year beginning in January 1988. Further information may be obtained by writing Outcomes Associates, PO Box 1046, Monroe WA 98272 or calling (206) 252-2173 or (206) 743-9000.

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The third national conference on outcome-based education will be held in Phoenix, Arizona, February 4-6 1988. The conference is being sponsored by the Network for Outcome-Based Schools and the National School Conference Institute. Experts on mastery learning and outcome-based education, practitioner sessions, and on-site school visits in the Phoenix area are featured. Over 400 participants from 30 states attended last year's conference. For more information, contact the National School Conference Institute, 3113 West Columbine Dr., Phoenix Az 85029 or call (602) 438-0225.

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The Far West Laboratory's Rural Schools Assistance Center has funded a project involving the School Improvement Unit of the Arizona Department of Education, three rural Arizona districts, and the Support for Outcome-Based Education project at the Laboratory. The three Arizona districts are Liberty Elementary, Show Low Unified, and Pine Elementary. The purpose of the project is to examine ways for rural districts to cooperate in the writing and sharing of mastery learning units. For more information, contact Robert Burns, Far West Laboratory at (415) 565-3269, or Sharon Bolster, Arizona Department of Education at (602) 255-5567.