

CHAPTER 12

Curriculum Evaluation

Evaluation has a long history. As Guba and Lincoln (1981) pointed out, a Chinese emperor in 2200 B.C. required that his public officials demonstrate their proficiency in formal competency tests. In the United States, the concern for evaluating schools can be traced at least as far back as the recommendations of the Committee of Ten, which at the end of the 19th century set perhaps the first example of “evaluative standards” for the nation’s secondary schools (National Education Association, 1969). In recent years, however, the interest in curriculum evaluation in particular has seemed to increase markedly. The public’s insistence on educational accountability, the experts’ demands for educational reform, and the educators’ concomitant need for evidence of results have all contributed to the current interest in theories and methods of curriculum evaluation. Unfortunately, much of this interest seems to have resulted in an ill-conceived obsession with test results. A broader perspective and more diversified approaches seem necessary.

This desired breadth and diversification have been reflected throughout this work. Chapter 6 described a comprehensive assessment model that can be used in improving a program of studies. Chapter 8 emphasized the importance of evaluating new courses of study. Chapter 11 described the importance of curriculum alignment. The intent of this chapter is to bring all these approaches into focus and to provide for greater understanding of the evaluation process. To that end, it begins by proposing a broad definition of the term *curriculum evaluation*. It then describes several evaluation models. It concludes by proposing a comprehensive and eclectic process that can be used to evaluate a field of study, which is perhaps the most difficult curricular element that evaluators face.

Questions addressed in this chapter include the following:

- What principles best define curriculum evaluation?
- What curriculum evaluation models are most effective?

- What criteria should be used to develop a curriculum evaluation model?
- How can learning experiences be organized for effective instruction?
- How can the effectiveness of learning experiences be evaluated?
- How can a field of study be evaluated?
- How can effective teaching be identified?

Key to Leadership

Successful curriculum leaders realize that evaluation in education is to help the educational process better relate to individual learners.

CURRICULUM EVALUATION DEFINED

That broader perspective mentioned above requires a less constricting view of both the purposes and foci of curriculum evaluation. In reviewing the literature and acquiring a broader understanding of purpose, two concepts delineated by Guba and Lincoln (1981) seem especially useful: *merit* and *worth*. **Merit**, as they use the term, refers to the intrinsic value of an entity—value that is implicit, inherent, and independent of any applications. Merit is established without reference to a context. **Worth**, on the other hand, is the value of an entity in reference to a particular context or a specific application. It is the “payoff” value for a given institution or group of people. Thus, a given English course may seem to have a great deal of merit in the eyes of experts: It may reflect sound theory, be built on current research, and embody content that experts deem desirable. The same course, however, may have relatively little worth for a teacher instructing unmotivated working-class youth in an urban school: It may require teaching skills that the teacher has not mastered and learning materials that the students cannot read. In this sense, then, curriculum evaluation should be concerned with assessing both merit and worth.

Assessment Leadership Tip

Curriculum evaluation is an attempt to toss light on two questions: Do planned courses, programs, activities, and learning opportunities as developed and organized actually produce desired results? How can the curriculum offerings best be improved?

The foci of curriculum evaluation also need to be expanded. To use the concepts of this present work, curriculum evaluation should be concerned with assessing the value of a **program of study** (all the planned learning experiences over a multiyear period for a given group of learners), a **field of study** (all the planned learning experiences over a multiyear

period in a given discipline or area of study), and a **course of study** (all the planned learning experiences for a period of 1 year or less in a given field of study). All three levels of curriculum work are important. Substantive differences exist between evaluating a program of study and a field of study, and differences of scope exist between evaluating a field of study and a course of study.

The foregoing analysis yields this stipulative definition of **curriculum evaluation**: *The assessment of the merit and worth of a program of studies, a field of study, or a course of study.*

EVALUATION MODELS

How can the merit and worth of such aspects of curriculum be determined? Evaluation specialists have proposed an array of models, an examination of which can provide useful background for the process presented in this work.

Bradley's Effectiveness Model

How can a developed curriculum be assessed and evaluated for effectiveness? Bradley's (1985) book *Curriculum Leadership and Development Handbook* provides 10 key indicators that can be used to measure the effectiveness of a developed curriculum. The chart in Exhibit 12.1 is designed to help you identify your perceptions regarding the 10 indicators to appraise curriculum effectiveness in your school building or district. To assess how your school or district meets each of the indicators, respond with a *Yes* or *No* in the column provided.

EXHIBIT 12.1 Bradley's Effectiveness Model for Curriculum Development Indicators		
Indicator	Description	Yes or No
Vertical curriculum continuity	The course of study reflects a K–12 format that enables teachers to have quick and constant access to what is being taught in the grade levels below and above them. Also, upward spiraling prevents undue or useless curricular repetition.	
Horizontal curriculum continuity	The course of study developed provides content and objectives that are common to all classrooms of the same grade level. Also, daily lesson plans reflect a commonality for the same grade level.	
Instruction based on curriculum	Lesson plans are derived from the course of study, and curriculum materials used are correlated with the content, objectives, and authentic tasks developed.	
Curriculum priority	Philosophical and financial commitments are evident. Clerical assistance is provided and reasonable stipends are paid to teachers for work during the summer months. In addition, curriculum topics appear on school board agendas, administrative meeting agendas, and building-staff meeting agendas.	

<i>Indicator</i>	<i>Description</i>	<i>Yes or No</i>
Broad involvement	Buildings in the district have teacher representatives on the curricular committees; elementary, middle level or junior high, and high school principals (or designees) are represented; and school board members are apprised of and approve the course of study.	
Long-range planning	Each program in the district is included in the 5-year sequence and review cycle. Also, a philosophy of education and theory of curriculum permeate the entire school district.	
Decision-making clarity	Controversies that occur during the development of a program center on the nature of the decision, and not on who makes the decision.	
Positive human relations	Also, the initial thoughts about the curriculum come from teachers, principals, and the curriculum leader. All participating members are willing to risk disagreeing with anyone else; however, communication lines are not allowed to break down.	
Theory-into-practice approach	The district philosophy, vision, mission, exit (graduation) outcomes, program philosophy, rationale statement, program goals, program objectives, learning outcomes, and authentic tasks are consistent and recognizable.	
Planned change	Tangible evidence shows that the internal and external publics accept the developed program course of study for the school district. The process of developing a course of study for each program or discipline in a school district is no longer one of determining how to do it, but one of determining how to do it better.	
If any of the 10 indicators are identified with a <i>No</i> (negative), consideration should be given to make it a <i>Yes</i> (positive) indicator.		

SOURCE: The 10 indicators of effective curriculum development were adapted from *Curriculum Leadership and Development Handbook* (pp. 141–146), by L. H. Bradley, 1985, Englewood Cliffs, NJ: Prentice Hall.

The indicators for effective curriculum development represent working characteristics that any complex organization must have in order to be responsive and responsible to its clients. Further, the measurement can be oriented to meet the needs of any school district—from large to small—and it can focus on a specific evaluation of a district’s curriculum area, such as reading, language arts, math, or any content area designated. The models (Tyler’s objectives-centered model; Stufflebeam’s context, input, process, product model; Scriven’s goal-free model; Stake’s responsive model, and Eisner’s connoisseurship model) presented below give some support to Bradley’s effectiveness model.

Tyler’s Objectives-Centered Model

One of the earliest curriculum evaluation models, which continues to influence many assessment projects, was that proposed by Ralph Tyler (1950) in his monograph *Basic Principles of Curriculum and Instruction*. As explained in this work and used in numerous

large-scale assessment efforts, the Tyler approach moved rationally and systematically through several related steps:

1. Begin with the behavioral objectives that have been previously determined. Those objectives should specify both the content of learning and the student behavior expected: “Demonstrate familiarity with dependable sources of information on questions relating to nutrition.”
2. Identify the situations that will give the student the opportunity to express the behavior embodied in the objective and that evoke or encourage this behavior. Thus, if you wish to assess oral language use, identify situations that evoke oral language.
3. Select, modify, or construct suitable evaluation instruments, and check the instruments for objectivity, reliability, and validity.
4. Use the instruments to obtain summarized or appraised results.
5. Compare the results obtained from several instruments before and after given periods in order to estimate the amount of change taking place.
6. Analyze the results in order to determine strengths and weaknesses of the curriculum and to identify possible explanations about the reason for this particular pattern of strengths and weaknesses.
7. Use the results to make the necessary modifications in the curriculum. (as cited in Glatthorn, 1987, p. 273)

The Tyler model has several advantages: It is relatively easy to understand and apply. It is rational and systematic. It focuses attention on curricular strengths and weaknesses, rather than being concerned solely with the performance of individual students. It also emphasizes the importance of a continuing cycle of assessment, analysis, and improvement. As Guba and Lincoln (1981) pointed out, however, it suffers from several deficiencies. It does not suggest how the objectives themselves should be evaluated. It does not provide standards or suggest how standards should be developed. Its emphasis on the prior statement of objectives may restrict creativity in curriculum development, and it seems to place undue emphasis on the preassessment and postassessment, ignoring completely the need for formative assessment. Similarly, Baron and Boschee (1995), in their book *Authentic Assessment: The Key to Unlocking Student Success*, stress that “we are encountering fundamental changes in the way we view and conduct assessment in American schools” (p. 1). And “sixty years have passed since we experienced such a deep-seated and thoughtful reevaluation of our assessment methods” (p. 1).

Stufflebeam’s Context, Input, Process, Product Model

These obvious weaknesses in the Tyler model led several evaluation experts in the late 1960s and early 1970s to attack the Tyler model and to offer their own alternatives.

The alternative that had the greatest impact was that developed by a Phi Delta Kappa committee chaired by Daniel Stufflebeam (1971). This model seemed to appeal to educational leaders because it emphasized the importance of producing evaluative data for decision making; in fact, decision making was the sole justification for evaluation, in the view of the Phi Delta Kappa committee.

To service the needs of decision makers, the Stufflebeam model provides a means for generating data relating to four stages of program operation: **context evaluation**, which continuously assesses needs and problems in the context to help decision makers determine goals and objectives; **input evaluation**, which assesses alternative means for achieving those goals to help decision makers choose optimal means; **process evaluation**, which monitors the processes both to ensure that the means are actually being implemented and to make the necessary modifications; and **product evaluation**, which compares actual ends with intended ends and leads to a series of recycling decisions.

During each of these four stages, specific steps are taken:

- The kinds of decisions are identified.
- The kinds of data needed to make those decisions are identified.
- Those data are collected.
- The criteria for determining quality are established.
- The data are analyzed on the basis of those criteria.
- The needed information is provided to decision makers. (as cited in Glatthorn, 1987, pp. 273–274)

The context, input, process, product (CIPP) model, as it has come to be called, has several attractive features for those interested in curriculum evaluation. Its emphasis on decision making seems appropriate for administrators concerned with improving curricula. Its concern for the formative aspects of evaluation remedies a serious deficiency in the Tyler model. Finally, the detailed guidelines and forms created by the committee provide step-by-step guidance for users.

The CIPP model, however, has some serious drawbacks associated with it. Its main weakness seems to be its failure to recognize the complexity of the decision-making process in organizations. It assumes more rationality than exists in such situations and ignores the political factors that play a large part in these decisions. Also, as Guba and Lincoln (1981) noted, it seems difficult to implement and expensive to maintain.

Scriven's Goal-Free Model

Michael Scriven (1972) was the first to question the assumption that goals or objectives are crucial in the evaluation process. After his involvement in several evaluation projects where so-called side effects seemed more significant than the original objectives, he began to question the seemingly arbitrary distinction between intended and unintended effects. His goal-free model was the outcome of this dissatisfaction.

In conducting a goal-free evaluation, the evaluator functions as an unbiased observer who begins by generating a profile of needs for the group served by a given program

(Scriven is somewhat vague as to how this needs profile is to be derived). Then, by using methods that are primarily qualitative in nature, the evaluator assesses the actual effects of the program. If a program has an effect that is responsive to one of the identified needs, then the program is perceived as useful.

Scriven's main contribution, obviously, was to redirect the attention of evaluators and administrators to the importance of unintended effects—a redirection that seems especially useful in education. If a mathematics program achieves its objectives of improving computational skills but has the unintended effect of diminishing interest in mathematics, then it cannot be judged completely successful. Scriven's emphasis on qualitative methods also seemed to come at an opportune moment, when there was increasing dissatisfaction in the research community with the dominance of quantitative methodologies.

As Scriven himself notes, however, goal-free evaluation should be used to complement, not supplant, goal-based assessments. Used alone, it cannot provide sufficient information for the decision maker. Some critics have faulted Scriven for not providing more explicit directions for developing and implementing the goal-free model; as a consequence, it probably can be used only by experts who do not require explicit guidance in assessing needs and detecting effects.

Stake's Responsive Model

Robert Stake (1975) made a major contribution to curriculum evaluation in his development of the responsive model, because the responsive model is based explicitly on the assumption that the concerns of the stakeholders—those for whom the evaluation is done—should be paramount in determining the evaluation issues. He made the point this way:

To emphasize evaluation issues that are important for each particular program, I recommend the responsive evaluation approach. It is an approach that trades off some measurement precision in order to increase the usefulness of the findings to persons in and around the program. . . . An educational evaluation is a responsive evaluation if it orients more directly to program activities than to program intents; responds to audience requirements for information; and if the different value perspectives present are referred to in reporting the success and failure of the program. (p. 14)

Stake recommends an interactive and recursive evaluation process that embodies these steps:

- The evaluator meets with clients, staff, and audiences to gain a sense of their perspectives on and intentions regarding the evaluation.
- The evaluator draws on such discussions and the analysis of any documents to determine the scope of the evaluation project.
- The evaluator observes the program closely to get a sense of its operation and to note any unintended deviations from announced intents.

- The evaluator discovers the stated and real purposes of the project and the concerns that various audiences have about it and the evaluation.
- The evaluator identifies the issues and problems with which the evaluation should be concerned. For each issue and problem, the evaluator develops an evaluation design, specifying the kinds of data needed.
- The evaluator selects the means needed to acquire the data desired. Most often, the means will be human observers or judges.
- The evaluator implements the data-collection procedures.
- The evaluator organizes the information into themes and prepares “portrayals” that communicate in natural ways the thematic reports. The portrayals may involve videotapes, artifacts, case studies, or other “faithful representations.”
- By again being sensitive to the concerns of the stakeholders, the evaluator decides which audiences require which reports and chooses formats most appropriate for given audiences. (as cited by Glatthorn, 1987, pp. 275–276)

Clearly, the chief advantage of the responsive model is its sensitivity to clients. By identifying their concerns and being sensitive to their values, by involving them closely throughout the evaluation, and by adapting the form of reports to meet their needs, the model, if effectively used, should result in evaluations of high utility to clients. The responsive model also has the virtue of flexibility: The evaluator is able to choose from a variety of methodologies once client concerns have been identified. Its chief weakness would seem to be its susceptibility to manipulation by clients, who in expressing their concerns might attempt to draw attention away from weaknesses they did not want exposed.

Eisner’s Connoisseurship Model

Elliot Eisner (1979) drew from his background in aesthetics and art education in developing his “connoisseurship” model, an approach to evaluation that emphasizes qualitative appreciation. The Eisner model is built on two closely related constructs: connoisseurship and criticism. Connoisseurship, in Eisner’s terms, is the art of appreciation—recognizing and appreciating through perceptual memory, drawing from experience to appreciate what is significant. It is the ability both to perceive the particulars of educational life and to understand how those particulars form part of a classroom structure. Criticism, to Eisner, is the art of disclosing qualities of an entity that connoisseurship perceives. In such a disclosure, the educational critic is more likely to use what Eisner calls “nondiscursive”—a language that is metaphorical, connotative, and symbolic. It uses linguistic forms to present, rather than represent, conception or feeling.

Educational criticism, in Eisner’s formulation, has three aspects. The descriptive aspect is an attempt to characterize and portray the relevant qualities of educational life—the rules, the regularities, the underlying architecture. The interpretive aspect uses ideas from the social sciences to explore meanings and develop alternative explanations—to explicate social phenomena. The evaluative aspect makes judgments to improve the educational processes and provides grounds for the value choices made so that others might better disagree.

The chief contribution of the Eisner model is that it breaks sharply with the traditional scientific models and offers a radically different view of what evaluation might be. In doing so, it broadens the evaluator's perspective and enriches his or her repertoire by drawing from a rich tradition of artistic criticism. Its critics have faulted it for its lack of methodological rigor, although Eisner has attempted to refute such charges. Critics have also argued that use of the model requires a great deal of expertise, noting the seeming elitism implied in the term *connoisseurship*.

DEVELOPING AN ECLECTIC APPROACH

The innovative practices to which many educators aspire can accommodate and build on more traditional mandates (Ferrero, 2006). Although the models above seem sharply distinct from one another, some evidence of congruence exists in current theories of evaluation. This congruence is quite evident in the ASCD monograph *Applied Strategies for Curriculum Evaluation* (Brandt, 1981), in which seven experts in evaluation were asked to explain how their "evaluation model" would be used in evaluating a secondary humanities course. While the models proposed by the experts (Stake, Scriven, Eisner, and Worthen) differed in many of their details, several common emphases emerged in the approaches: Study the context, determine client concerns, use qualitative methods, assess opportunity cost (what other opportunities the student is missing by taking this course), be sensitive to unintended effects, and develop different reports for different audiences.

By using these common emphases, along with insights generated from analyzing other models, it is possible to develop a list of criteria that can be used in both assessing and developing evaluation models. Such a list is shown in Exhibit 12.2. Districts with sufficient resources to employ an expert consultant can use the criteria to assess the model proposed by the consultant; districts developing a homegrown process can use the criteria to direct their own work.

The criteria will obviously result in an eclectic approach to evaluation, one that draws from the strengths of several different models. Such an eclectic process has been used successfully in evaluating a field of study; this same process also can be used to evaluate a course of study with the scope of the evaluation reduced.

Challenges to Program Evaluation

The single largest barrier to effective curriculum implementation continues to be basic awareness of the measurable benefits. Unprecedented assessment of public schools is spurring an investment of billions of dollars, but the lack of research and quality measurement has led to unclear results. The key issues are the establishment of more effective and accurate ways with which we can measure the real benefits of education and measure the true associated costs in money and time spent learning about curriculum and instruction. Sociological acceptance and adoption of new communications technologies continue to represent a challenge as well. Another concern is the lack of leadership in establishing strong evaluation and assessment agendas and programs.

EXHIBIT 12.2 Criteria for a Curriculum Evaluation Model

An effective curriculum evaluation model does the following:

1. Can be implemented without making inordinate demands upon district resources
2. Can be applied to all levels of curriculum—programs of study, fields of study, courses of study
3. Makes provisions for assessing all significant aspects of curriculum—the written, the taught, the supported, the tested, and the learned curricula
4. Makes useful distinctions between merit (intrinsic value) and worth (value for a given context)
5. Is responsive to the special concerns of district stakeholders and is able to provide them with the data they need for decision making
6. Is goal oriented, emphasizing objectives and outcomes
7. Is sensitive to and makes appropriate provisions for assessing unintended effects
8. Pays due attention to and makes provisions for assessing formative aspects of evaluation
9. Is sensitive to and makes provisions for assessing the special context for the curriculum
10. Is sensitive to and makes provisions for assessing the aesthetic or qualitative aspects of the curriculum
11. Makes provisions for assessing opportunity cost—the opportunities lost by those studying this curriculum
12. Uses both quantitative and qualitative methods for gathering and analyzing data
13. Presents findings in reports responsive to the special needs of several audiences

Leadership and Evaluation

Quality leadership is a key component in the success of any evaluation process. One of the most important aspects of that leadership role is for educational planners to understand the process of evaluation and how it should be administered. Understanding the evaluation process means leaders will have to convey knowledge of curriculum as well as instructional strategies. They will also have to convey their expectations of how teaching and learning can be enhanced via the curriculum. There is a special need for leadership and more understanding as to the process of evaluation and how it relates to the development of effective curriculum.

Technology and Evaluation

The rapid changes occurring in computer technology also pose a challenge to establishing effective evaluation programs. Technology capabilities have continued to change faster than educational researchers can sustain. For example, initial evidence on the use of computers in the classroom showed that “drill and practice” activities were successful in reinforcing skills. Now, with continued advances in software and technology, teachers are using computers in classrooms in entirely different ways. It therefore has

been difficult for researchers to complete large-scale, controlled studies that lead to solid conclusions because by the time their research is published, new technologies are providing new opportunities for teachers and students. With the exception of National Educational Technology Standards and the International Society for Technology in Education, the lack of correlated state technology standards and guidelines at times creates a barrier to providing quality assessment. Currently, a limited number of districts in the country have established formal guidelines for evaluating the effectiveness of technology in their schools.

Strong evidence of technology's effectiveness will surely further strengthen public and political support. Richard Mayer, Miriam Schustack, and William Blanton (1999) stated,

Our research provides encouraging evidence that appropriate experience with educational technology can promote important cognitive changes in children, including improvements in content knowledge about computing, strategies for comprehending written instruction, strategies for devising problem-solving plans, and even in basic academic skills. (n.p.)

As the demand for technology in the classroom increases, the need for evaluation also increases. Administrators, teachers, and parents want to know and understand the impact that technology has made on district goals relating to student learning, staff development, and program content.

EVALUATING A FIELD OF STUDY

"How good is our K–12 science curriculum?" The answer to this question comes from evaluating a field of study—a multigrade sequence of learning experiences in one discipline, subject area, or field. Such evaluations are almost always made for a single purpose—to identify strengths and weaknesses in order to plan for improvements. The process of evaluating a field of study includes five important phases: preparing for the evaluation, assessing the context, identifying the evaluation issues, developing the evaluation design, and implementing the evaluation design.

Preparing for the Evaluation

Preparations for the evaluation include three major steps: setting the project parameters, selecting the project director and the evaluation task force, and preparing the evaluation documents.

In setting the project parameters, district administrators in consultation with the school board should determine both the purpose and the limits of the project. They should, first of all, be clear about the central purpose of the review, because purpose will affect both issues to be examined and methods to be used. In identifying the limits of the project, they should develop answers to the following questions:

- How much time will be allocated, and by what date should the evaluation be completed?
- What human, fiscal, and material resources will be provided?
- Which fields will be evaluated?
- What constituencies will be asked for input? Specifically, will parents, community representatives, and students be involved?

With those parameters set, the project director and evaluation task force should be selected. The project director should be a consultant or a member of the district staff who has considerable technical expertise in curriculum evaluation. The task force should function as an advisory and planning group, making recommendations to and monitoring the performance of the project director. It should probably include a total of 10 to 20 individuals, depending on the size of the district, and have adequate representation from these constituencies: school board, school administrators, teachers and other faculty members, and parents and community organizations. If administrators wish, and if it is felt that their input can be useful, secondary students can be included.

The project director and the task force can then begin to assemble the documents necessary for the program review. The following documents will typically be needed:

- A statement of the curriculum goals for that field
- A comprehensive description of the community and the student body
- A list of all required courses in that field, with time allocations and brief descriptions of each course
- A list of all elective courses in the field, including time allocations, course descriptions, and most recent enrollment figures
- A random selection of student schedules
- Syllabi or course guides for all courses offered
- Faculty schedules, showing class enrollments

Other materials, of course, will be required as the review gets under way, but the above-listed materials are important at the outset.

Assessing the Context

The next stage in a comprehensive evaluation of a field of study is to assess the context. While this stage is obviously of critical importance for an outside evaluator, it is also essential in district-directed projects. The context assessment stage enables the evaluators to identify both the salient aspects of the educational environment that impinge on the field of studies and the critical needs of the learners. In assessing the context, the evaluators typically should seek answers to the following questions:

1. What are the prevailing attitudes, values, and expectations of the community?
2. What significant aspects of the school district impinge on the field of study: size, leadership, organizational structure, fiscal resources?

3. What are the special characteristics of school facilities that impinge on or constrain this field of study?
4. What are the special characteristics of the student body: scholastic aptitude, achievement, home background, ethnic identity, social and physical development?
5. What are the special characteristics of the faculty: experience, educational values, overall competence, educational background?
6. What is special about the school organization: nature of leadership, organizational structure?

The context assessment should result in a report that calls attention to the salient aspects affecting the field of study and identifies the special needs of the learners.

Identifying the Evaluation Issues

The next step in the process is to identify the evaluation issues, to be sure that the evaluation is sensitive to the special concern of the stakeholders and will provide the information needed. Here, the distinctions between the several aspects of the curriculum are essential: the written, the supported, the taught, the tested, and the learned curricula all subsume quite different assessment issues.

Also, each of these five must be assessed if the results are to be at all valid. In too many curriculum evaluations, the team evaluates only the written curriculum (the official course guides) and the learned curriculum (the results on achievement tests). No valid inferences can be drawn from such an assessment, because the other three important components have been ignored. Suppose, for example, that the students in a particular district do not perform well on measures of critical thinking in social studies, even though district guides include such units. District administrators cannot be sure about the causes of the problem. It might well be that teachers have chosen not to teach those units because they lack the training and materials necessary. Only a comprehensive assessment can yield the information needed to make improvements.

As shown in Exhibit 12.3, those five components subsume more than 50 different issues. Obviously, not all these issues will be used in every evaluation. Here, it is essential for the evaluation team to identify the issues by surveying and interviewing stakeholders. That list of issues can be used to survey such constituencies as board members, school administrators, faculty, and parents, using a form similar to the one shown in Exhibit 12.4. The responses can then be analyzed to determine which issues should be evaluated, given the constraints previously identified. The surveys, of course, should be supplemented with interviews of key individuals to provide supplementary data.

Developing the Evaluation Design

With the evaluation issues identified, the project director and the task force should cooperatively develop the evaluation design. One historical and yet useful framework for such a design was proposed by Worthen (1981). For each evaluative question (or evaluation issue, to use the terminology employed here), identify the information required, the

EXHIBIT 12.3 Evaluation Issues: Field of Study**The Written Curriculum***Goals*

1. Are the goals of this subject clearly and explicitly stated and readily accessible to those who need to refer to them?
2. Are those goals congruent with relevant curricular goals of the school district?
3. Are the goals in accord with the recommendations of experts in the field?
4. Are the goals understood and supported by parents?
5. Are the goals understood and supported by school administrators?
6. Are the goals understood and supported by classroom teachers?
7. Are the goals understood and supported by students?

Scope and Sequence of Level Objectives

1. Have the goals of this field been analyzed into a set of grade-level (or achievement level) objectives that identify the important concepts, skills, and attitudes to be attained?
2. Are those level objectives sufficiently comprehensive so that they adequately reflect the goals of this field?
3. Are those level objectives clearly displayed in some form (such as a scope-and-sequence chart) that facilitates understanding and use?
4. Are the level objectives in accord with and do they reflect the recommendations of experts in the field?
5. Does the grade placement of objectives reflect the best current knowledge of child development?
6. Does the grade placement of objectives provide for sufficient reinforcement without undue repetition?
7. Is the grade placement of objectives appropriate in relation to their difficulty for learners at that level?
8. Are the objectives appropriately distributed over the grades so that there is balance between the grades?

Written Course Guides

1. Are there written course guides for this field covering all grade levels?
2. Are those guides readily available to administrators, teachers, and parents?
3. Does the format of the guides facilitate revision and amplification?
4. Do the guides clearly specify grade-level objectives in a format and manner that facilitate use?
5. Do the guides make appropriate distinctions between mastery, organic, and enrichment outcomes and focus primarily on the mastery outcomes?
6. Do the guides indicate clearly the relative importance of the mastery outcomes and suggest time allocations that reflect their importance?

(Continued)

EXHIBIT 12.3 (Continued)

7. Do the guides suggest ways of organizing the objectives into learning units, without requiring a particular type of unit organization?
8. Do the guides recommend (but not mandate) teaching/learning activities that seem likely to lead to the attainment of the relevant objectives?
9. Do the teaching and learning activities recommended reflect the best current knowledge about teaching and learning, and are they qualitatively excellent?
10. Do the guides suggest appropriate evaluation processes and instruments?
11. Do the guides recommend appropriate instructional materials and other resources?

The Supported Curriculum*Time*

1. Has the school district clearly specified time to be allocated to this field of study at each level of schooling?
2. Does the time allocated to this field seem appropriate in relation to the district's goals, the goals of the field of study, and the recommendations of experts?
3. Do school master schedules and administrative guidelines on time allocation appropriately reflect district allocations?

Materials

1. Is the quantity of instructional materials adequate in relation to student enrollments?
2. Are the learning objectives of the instructional materials consonant with the objectives of the written course guides?
3. Do the instructional materials reflect the best current knowledge in this field of study?
4. Are the instructional materials free of gender bias and ethnic stereotyping?
5. Are the instructional materials written at an appropriate level of difficulty?
6. Are the instructional materials designed and organized in a manner that facilitates teacher use?
7. Do the instructional materials reflect sound learning principles, providing adequately for motivation, explanation, application, reinforcement, and enrichment?

Staff Development

1. Does the district provide ongoing staff-development programs that help the teachers use the curriculum guides effectively and involve teachers in improving the guides?

The Taught Curriculum

1. Do the teachers allocate time to this field of study in accordance with district and school guidelines?
2. Do the teachers allocate time to the several components of this field of study in a way that reflects curricular priorities?
3. Do the teachers teach for the objectives specified for that grade?

4. Do the instructional methods used by the teachers reflect the best current knowledge about teaching that field of study and are they qualitatively excellent?
5. What unintended effects does this curriculum have on teaching?

The Tested Curriculum

1. Does the district provide curriculum-based tests that adequately reflect and correspond with the objectives stated in the course guides?
2. Are such tests valid and reliable measures of performance?
3. Does the district make use of standardized tests that provide norm-referenced data on achievement in this field of study?
4. Do any standardized tests used by the district adequately reflect and correspond with the objectives stated in the course guides?

The Learned Curriculum

1. Do pupils believe that what they are learning is useful and meaningful?
2. Do pupils achieve the specified objectives at a satisfactory level?
3. What unintended learning outcomes are evidenced?
4. What are the opportunity costs for pupils involved in this field of study?

Formative Aspects

1. By what processes was this field of study developed, and did those processes provide for appropriate input from all constituencies?
2. What specific provisions are there for continuing input from those constituencies?
3. What specific provisions are there for revising and modifying the program of studies?

EXHIBIT 12.4 Survey Form—Evaluation Issues: Mathematics

Directions: As you probably are aware, our school district will soon begin to evaluate the mathematics curriculum in our district. Listed below are the questions we might ask in such an evaluation. Tell us how important you think each question is. Read each question and then circle one of the following symbols:

VI: I think this question is very important.

I: I think this question is important.

LI: I think this question is less important.

Your responses will help us decide which questions to study.

<i>Question</i>	<i>Your Response</i>		
1. Are the goals of this subject clearly and explicitly stated and readily accessible to those who need to refer to them?	VI	I	LI

sources of information, and the methods for collecting that information. Thus, in an example used by Worthen, if the evaluation proposes to answer the question, “Do student attitudes demonstrate that the curriculum is producing the desired results?” the attitudes of students with regard to the values and concepts taught constitute the information required. Students are the source of information, and the methods employed might include a comparative design using attitude scales and simulated situations requiring an attitudinal response.

In identifying the methods for collecting information, evaluators should be certain to include qualitative approaches. As noted above, current evaluation theory gives strong emphasis to such qualitative methods as interviews and observations in assessing curriculum impact.

Those decisions—about the issues, the information required, the sources of information, and the methods for collecting information—should form the basis of a detailed evaluation plan, which would also include the specific tasks to be undertaken, the names of those responsible for each task, and the deadline for accomplishing the task.

Focusing on Student Performance

According to Thomas Guskey (2007–2008), many teachers use computers and other forms of technology—including videodiscs, laser discs, interactive video, various forms of hypermedia, and a variety of powerful online resources—as a primary means of corrective activities. The highly versatile, user-friendly nature of technology makes it appropriate for almost any subject area and grade level. Computer activities enable students to work alone or in collaboration with classmates.

It is, therefore, essential that the direction for the technology initiative remain focused on student performance. The key behind computer assessment is to create a more symbiotic relationship between web-based learning and the curriculum. In doing so, correlations between student performance and the use of technology in the classrooms will become more evident. Thus, appropriate mechanisms and administrative structures will need to be made so that student performance can be measured and assessed in relevant ways. The key here is that teachers, students, administrators, and the external community see that technology is having a positive effect on student achievement and that students are performing better because of the technological changes enacted within your school.

Electronic Testing

According to Allan Olson (2004), president and executive director of Northwest Evaluation Association, schools in the future will not be grouped by age but by instructional needs, and it will be done electronically. Students will not be assigned one teacher and will not be in a closed-door classroom but, rather, will have multiple teachers and be in a more open and collaborative environment. Students will be matched with teachers who have the skills and proficiency to best instruct them. To arrive at this future, schools must use cutting-edge evaluation tools such as adaptive electronic testing that provides a comprehensive assessment of a student’s needs.

The ultimate indicator of an effective school is the measure of academic growth of its students. Without sufficient data, schools cannot fine-tune programs or respond to students' individual needs quickly enough to meet local, state, or federal guidelines. This is a major problem with the states and the federal government mandating that schools attain a high proficiency rate of student achievement.

New developments in technology are allowing schools to use Internet-enabled assessment tools that adjust in difficulty to the individual students' ability. Because electronic tests are customized on demand, each student is engaged and the results are more accurate. Electronic results are also instantaneous. This allows teachers to see quickly whether students are succeeding or falling behind. Curriculum and instruction can then be modified to address the results. Electronic adaptive tests can be given any time: fall, winter, or spring. Tests can be tailored to meet federal, state, and district mandates.

Unlike conventional evaluative tests, computerized adaptive tests measure achievement status and academic growth for every child. Schools and curriculum leaders can assess a program's effectiveness for children with different instructional needs. Timely, accurate data provide school leaders with information to adjust instruction and/or programs as needed during the school year to ensure individual learning and to improve program effectiveness. Using up-to-date Internet-enabled assessments, curriculum leaders and teachers will have a chance to shape tomorrow's schools today.

Value-Added Assessment

Value-added assessment is a technique of using test data to determine the value that teachers add to the learning of each student. It focuses on how test data can help each child academically. This type of assessment makes it possible to isolate the impact of the individual teacher and to respond with appropriate rewards or corrective training. Former University of Tennessee statistician William Sanders, who helped pioneer value-added research, noted that this method offers a way to ensure that as few children as possible suffer a disadvantage in learning. Sanders (as cited in Holland, 2001) believed that "under effective teachers, students could make gains no matter what their ability or achievement levels were when they started" (p. 3).

Value-Added Assessment Format:

- Each spring, students take a norm-referenced state test in five core subjects (math, science, reading, language, and social studies). Nonredundant test items are added each year in an attempt to discourage blatant "teaching to the test."
- Each fall, districts receive a report card broken down by school and grade showing progress in each subject in the context of 3-year averages. The system records student achievement gains in scale score points and in the form of comparisons to local, state, and national averages. School and district reports are reported to the public.
- Each teacher receives a report card—one that is not released to the general public—showing the year-to-year progress of his or her students. Supervisors also receive these reports. It is this application of these data that holds the greatest promise for building a better teacher.

Evaluation of the Curriculum Using Student Achievement and Effective Instruction

The increased involvement of the state and federal government in education and curriculum has had a definite impact on the development of curriculum. With the implementation of the No Child Left Behind Act (NCLB), Common Core State Standards for English language arts and math, and Response to Intervention, states have increasingly become involved in setting standards for course curricula. These standards are the basis for state testing and for meeting the regulations set forth by NCLB and the Common Core State Standards. However, many teachers fail to take advantage of the instructional benefits that properly constructed tests can bring to teachers and students (Popham, 2001). Therefore, the written curriculum of schools needs to follow state standards closely. With this in mind, the evaluation of the written curriculum and its effectiveness is ever more dependent on the taught curriculum. To be effective, the written curriculum needs to be the “taught curriculum.”

Ineffective and Effective Teaching

In a study by Pam Homan (2003), in the Sioux Falls, South Dakota, school district, the importance of teaching and testing the “written curriculum” was reinforced. Dr. Homan looked at all fifth-grade teachers in the district. By studying 3 consecutive years of test results and by using a multiple regression analysis, Dr. Homan was able to identify the fifth-grade teachers whose children always scored higher on the standardized tests administered by the school district. She also identified the teachers whose students performed below expectations on the same tests. Through a process of observations, Dr. Homan and other district administrators were able to identify effective instruction as the major contributing factor in student achievement.

Results. Homan’s (2003) observational analysis, detailed in Exhibit 12.5a, found a difference in the presence of 12 of the 14 categories of effective teaching between teachers with high student achievement and teachers with low student achievement. No difference existed in the presence of “reteaches” and “positive self-concept.” The greatest differences between the two groups were in “instructional planning,” “instructional techniques,” “provides feedback,” “communicates expectations,” “manages behavior,” and “maximizes instructional time.” Exhibit 12.5a shows the difference in percentages of the indicator traits demonstrated between the two groups. Exhibit 12.5b lists the specific indicators within each category of effective teaching.

Summary. The results indicate that specific indicators of effective teaching do exist to a greater degree in classrooms with high overall student achievement versus classrooms with low overall student achievement. Given the implications of NCLB and the expectation that all students be proficient by 2013–2014, it is important that effective teaching be maximized for each student. The findings of this study confirm the need for both identification and follow-up of targeted interventions to help classroom teachers maximize effective teaching. Although the NCLB waiver plan removes the expectation that all students be proficient in reading and math by 2014, it does not waive the effective teaching principle. “The plan says schools in states applying for waivers must include student growth measures in teacher evaluations” (Staff and Wire Reports, 2011, p. A5).

EXHIBIT 12.5a Teachers and Student Achievement Levels

<i>Categories of Effective Teaching</i>	<i>Percentage of Indicator Traits Demonstrated</i>	
	<i>Teachers With Low Student Achievement</i>	<i>Teachers With High Student Achievement</i>
Instructional planning	46	100
District curriculum	93	100
Effective lesson	83	100
Instructional techniques	68	97
Enhances self-concept	92	96
Assesses students	80	100
Provides feedback	77	100
Communicates expectations	60	100
Reteaches	100	100
Checks understanding	80	100
Organizes classroom	92	95
Manages behavior	75	100
Maximizes instructional time	70	100
Positive self-concept	100	100

SOURCE: From *Sioux Falls School District 2002–2003 Value Added Analysis of Student Achievement and Effective Instruction* by P. Homan, 2003, unpublished manuscript. Printed with permission.

EXHIBIT 12.5b Effective and Unavailing Teachers

<i>Teachers With High Student Achievement</i>	<i>Teachers With Low Student Achievement</i>
<ul style="list-style-type: none"> • Strong instructional focus—knew the curriculum and where he/she was headed 	<ul style="list-style-type: none"> • Low expectations not directly related to grade-appropriate curriculum • Lacked clear, purposeful instruction
<ul style="list-style-type: none"> • Smooth and quick transitions 	<ul style="list-style-type: none"> • Spent excessive time telling students what they would be doing • Transitions were chaotic
<ul style="list-style-type: none"> • Maximized time on purposeful instructional tasks—all aspects of the lesson were clearly connected to a district learning standard 	<ul style="list-style-type: none"> • Lost time on task with noninstructional tasks—parts of the lesson included activities not related to grade-appropriate learning standards

(Continued)

EXHIBIT 12.5b (Continued)	
<i>Teachers With High Student Achievement</i>	<i>Teachers With Low Student Achievement</i>
<ul style="list-style-type: none"> Naturally and positively redirected students without disrupting instruction for others 	<ul style="list-style-type: none"> Redirection disrupted learning for others and did not maintain dignity of students
<ul style="list-style-type: none"> Naturally and immediately included students returning from pull-outs 	<ul style="list-style-type: none"> Did not attend to students returning from pull-outs
<ul style="list-style-type: none"> Established routines known by all students 	<ul style="list-style-type: none"> Constant low-key commotion in the room

SOURCE: From *Sioux Falls School District 2002–2003 Value-Added Analysis of Student Achievement and Effective Instruction* by P. Homan, 2003, unpublished manuscript. Printed with permission.

The district will develop a training model to assist building principals in observing and providing specific feedback to teachers regarding the presence or lack of indicators of effective teaching in their classrooms. In addition, this model will provide principals a vehicle for training teachers within their building to self-assess the presence or lack of indicators of effective teaching in relationship to student achievement.

Evaluation Checklist

Evaluation checklists are helpful to educational planners trying to gauge the success of their classroom curricular program. The checklist for the curricular program components chart (Exhibit 12.6) is easy to administer and provides a quick assessment of program components.

Evaluation tools such as the checklist do not have to be complicated. These instruments help determine whether key components are present in the classroom program.

EXHIBIT 12.6 Evaluation Checklist	
<i>Check ✓ if yes</i>	<i>Curricular Program Components</i>
	Does the curriculum provide evidence of administrative and school board support?
	Does the curriculum plan incorporate a mission statement?
	Does the curriculum plan establish a task force or advisory committee?
	Does the curriculum plan facilitate the involvement of parents and the community?
	Does the curriculum design allow for research development?
	Does the curriculum plan utilize student learner outcomes as a measure?
	Does the curriculum plan have an evaluation tool that provides for the collection of qualitative data?

Evaluation Strategies

The following are strategies that successful administrators use in developing assessment and evaluation programs.

Setting Goals and Indicators

The evaluation and assessment process must be linked back to the original mission statement and objectives of the district. Indicators of successful curriculum integration for the purposes of evaluation should be established during the early planning stages of the program.

Identifying Target Populations

Successful evaluation and assessment procedures should focus on targeting specific external and internal population groups. Parents and community represent external groups. Trustees, administrators, teachers, and students represent internal target groups. Data collection needs to focus specifically on these target areas and how they relate to school and curriculum.

Evaluation Centers

The National Study for School Evaluation, located in Schaumburg, Illinois, provides a wealth of information on technology evaluation and assessment.

Regional Technology Training Centers

The Northwest Regional Educational Laboratory and other regional technology centers across the United States provide a plethora of information on best practices involving assessment and evaluation. They also provide conferences and workshops on evaluation strategies. Regardless of the process used to evaluate a program, planners need to be willing to utilize data and make changes and adjustments where necessary. They must understand that curriculum improvement and instructional improvement are interconnected and that a change in one area will probably elicit a change in another area. Problems and concerns can cloud issues at hand, making evaluation an important tool. With higher-quality and more detailed information at our disposal, curriculum leaders will be able to focus more on how technology can help teachers with student achievement in the future.

Implementing the Evaluation Design

With the design developed, the evaluation team can move expeditiously to implement the design and report the results. Two matters should be stressed here: First, the implementation process should be flexible. If new issues develop or if additional data sources become apparent, they should be built into a revised design and incorporated into the implementation process. Second, the results should be reported in ways that will

accommodate the special needs of the several audiences. Thus, several reports might be envisioned: a summary written in plain language for the public, an action plan presented to the board and school administrators, and a detailed technical report for the broader educational community.

Once people know, firsthand, and are able to measure the benefits of effective curriculum planning and evaluation, the public support for funding will become viable. Indicators of success used to measure the impact of student achievement in schools will be a determining factor. It is hoped that future research will be based on these indicators to give educational planners a more complete picture as to the impact of technology on teaching and learning in our nation's classrooms. A key to the success of any curricular program in the future is the ability of school leaders to develop awareness and understanding through the implementation of an effective evaluation program. Throughout the entire evaluation process, the focus for administrators should be on combining appropriate strategies with measurable results indicating positive correlations with teaching and learning.

SUMMARY

This chapter brings approaches of curriculum leadership into a global focus and provides for greater understanding of the evaluation process. To that end, it proposes a broad definition of the term *curriculum evaluation*. It also describes several effective evaluation models. The chapter proposes a comprehensive and eclectic process that can be used to evaluate a field of study as well as technological applications. In addition, challenges to curriculum leadership are addressed.

APPLICATIONS

1. Choose one of the issues identified for the field of study evaluation. Use the Worthen (1981) framework in developing a design for that issue.
2. Select one of the models described and write a detailed explication and critique of that model.
3. Suppose a classroom teacher posed this question to you: "I want to evaluate my own course. I don't know much about statistics. Can you tell me how to evaluate it in a way that won't take too much time?" Write the answer you would give that teacher.
4. Examine Homan's (2003) study on effective teaching and its importance in relationship to student success. Develop an in-service presentation for teachers in your school district in which you could effectively use this study to enhance teaching and improve student performance.
5. Using the evaluation checklist in Exhibit 12.6, evaluate a classroom curricular program in your school.

6. If you answered *no* to any of the curriculum development indicators in Bradley's effectiveness model from Exhibit 12.1, explain how you would make it/them positive (*yes*).
7. In the chart provided below, identify the elements from each of the curriculum development models that address Bradley's effectiveness model.

<i>Models</i>	<i>Place the item number(s) from Bradley's effectiveness model in this column.</i>
Tyler's objectives-centered model	
Stufflebeam's context, input, process, product model	
Scriven's goal-free model	
Stake's responsive model	
Eisner's connoisseurship model	
Overall, what elements from Bradley's effectiveness model were not addressed?	

CASE STUDY Teaching to the Test

A school trustee shares with Kathy Peterson, district superintendent, that one of the school district teachers is teaching to the test.

"I understand that one of our sixth-grade teachers is teaching to the test in Principal Harris's building," says board trustee Ron Dawson.

Superintendent Peterson smiles. "It would be a problem if we were talking about a norm-referenced standardized test as the evaluative tool. Fortunately, it is my understanding that the sixth-grade teacher is referring to our criterion-referenced test that is currently based on state standards. In this case, we want the teachers to analyze the items and adjust their curriculum to benchmarks on the test—so, in effect, she is teaching to the test."

Trustee Dawson looks as though he is slightly confused.

Peterson continues, "Not only is she teaching to the test, but she has also developed a computerized grading system that has the capability of providing e-mail reports to parents. This way, the parents can also help address the acquisition of certain basic skills. The result is that we have basically wrapped the testing process into our curriculum evaluation process."

"And how is that?" Ron Dawson asks.

"Well, at a push of a button, your sixth-grade teacher can average and total any student's grade at any time. If parents walk through the door, she can tell them exactly how their child is doing. She also has an electronic portfolio of every student as part of the evaluative process."

Trustee Dawson likes the idea of having the district's teachers addressing basic skills that are on the state test. "This concept of teaching to the test—a criterion-referenced test—is what we should have been doing all along," he says enthusiastically.

The Challenge

Using electronic testing and setting benchmarks is proving to be a successful evaluation strategy for Principal Harris. What are some other novel or innovative ways that Principal Harris can use to evaluate and assess student achievement as well as his overall school curricula?

Key Issues/Questions

1. What are some major differences between electronic testing and regular testing? Do you feel that electronic online testing is worth the cost? Why or why not?
2. How might Principal Harris deal with resistance from teachers who oppose the use of electronic testing and data analysis?
3. If the principal meets with other teachers about using a data analysis approach, what should be discussed?
4. What future role will online electronic testing have in evaluating a field of study?
5. What are some other technological approaches that Principal Harris might use to assess student achievement? Identify the strategies and explain why you think they might be effective.

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