*An application of Gordon Mackenzie's "Six Determiners of Curriculum"*

# COMPARING CURRICULUM PROPOSALS

**HARRY V. SCOTT**
**Associate Professor, Department of Education, West Virginia State College, Institute**

THE story is told of a mathematics curriculum committee in a small city that sat down to select a new program from among ten available proposals. At the end of one year this committee had not even narrowed its choices to nine. We can assume that when curriculum workers sit down to compare proposals in any content field they use whatever criteria they may have. Perhaps the only difference between our mathematics committee and others is that ours was being more honest. The error of this committee lay in assuming that "outstanding merit" would emerge from one or two of the proposals. Comparison, however, is not so intuitive a job.

It is the responsibility of the general curriculum field to develop criteria—by invention or adaptation—for those who must make curriculum decisions. The purpose of this paper is to contribute to the job of developing criteria by synthesizing some work from the curriculum field and from the field of diffusion research. Attention will be focused on what Gordon Mackenzie called the "comparison of proposals" phase of the curriculum change process.[1] (The end product here is a set of criteria that can be used in getting on with the job of comparing curriculum proposals.)

Each phase of the change process needs careful scrutiny and developmental "fleshing out," but the comparison of proposals phase is of considerable urgency right now. Even a quick look at one of the lists of curriculum proposals being prepared shows that abundance will be the fate of more than just mathematics curriculum committees.[2]

One of the values of a descriptive paradigm, such as Mackenzie's para-

[1] Gordon Mackenzie. "Curricular Change: Participants, Power, Processes." In: *Innovation in Education*. M. B. Miles, editor. New York: Bureau of Publications, Teachers College, Columbia University, 1964. p. 422.

[2] As for example, G. G. Unruh, editor. *New Curriculum Developments*. Washington, D.C.: Association for Supervision and Curriculum Development, 1965. *passim*.

digm of the curriculum change process, is that it points out paths for development work and research. One of the values of "fleshing out" a paradigm, which is attempted later in this paper, is in showing specific gaps in our knowledge that lead to directed research and development.

Mackenzie has discovered that the curriculum change process typically moves through a series of phases, beginning with criticism of the old program and ending in implementation of a newly selected program.[3] Each of these phases—that is, decision making in each of these phases—can be conceptualized in terms of six variables or "determiners of the curriculum." These determiners are the teachers and students for whom selection will be made, the content, methods, and materials involved in the proposal, and the element of time.[4] Hence, when comparing new proposals one may examine them in terms of their relations to and possible effects on each of the six determiners, and then one would select the proposal with the most desirable profile.

Certain papers in the fields of curriculum and diffusion research have been especially useful in shedding light on the work of comparing curriculum proposals. Everett M. Rogers has isolated for study five broad characteristics of any innovation: compatibility, relative advantage, complexity, divisibility, and communicability.[5] It seems reasonable to use these characteristics as focal points in comparing innovations, as well as in comparing an innovation with an existing program.

Among the other sources used in building the instrument presented later in this paper are the guidelines produced by ASCD in *Assessing and Using Curriculum Content*[6] and an occasional paper (mimeographed) from the Department of Curriculum and Teaching, Teachers College, Columbia University, which suggests guidelines for examining curriculum innovations.[7] Both sources were tapped for questions and details in the instrument described later.

The last sentence above speaks volumes about this paper and about "the state of the art." At this stage in the history of curriculum the need is for developing questions that have *operational meaning* in making comparisons of proposals. Giving operational meaning to criteria sometimes means asking questions in such a way that unequivocal answers can be found. It can also mean that devices and techniques must be developed that can yield operational meanings. In some cases the curriculum field has already produced questions with operational meanings. Examples of all three will be found in the instrument described later.

## Comments on the Instrument

1. Entries in this instrument are not all of the same objective quality. For

(*Continued on page 246*)

[3] Mackenzie, *op. cit.*, p. 401, 420-23.

[4] *Ibid.*, pp. 400-407.

[5] Everett M. Rogers. *Diffusion of Innovations*. New York: Free Press of Glencoe, 1962. p. 306.

[6] Association for Supervision and Curriculum Development. *Assessing and Using Curriculum Content*. Washington, D.C.: the Association, 1965. *passim*.

[7] Department of Curriculum and Teaching, Teachers College, Columbia University. "Suggestions To Guide the Study of Innovations in Organization, Method, and Materials." Unpublished paper, 1961.

(*Continued from page 243*)
example, the criteria on expectations in the sections called "Teachers" and "Students" are mostly based on personal observation. (These criteria were not casually selected, but other curriculum workers would probably add to these.) Other criteria are drawn from the area of programmed instruction, in which operationality is the byword. Still other criteria belong to the lore and traditions of pedagogy. A few are taken from the field of diffusion research. Several are rather new inventions.

2. Some but not all of the criteria are intended to yield biased data. For example, if the bias that is inherent in the criteria on student competencies is not the reader's bias, presumably he would want to get "no" answers when he applies the criteria to a proposal.

3. The instrument has been designed for use in content areas, rather than with such broad areas as reading. Some of the criteria need to be thought of in terms of some subject field in order to give them any meaning. Student expectations, for example, need to be listed for each field.

4. Some of the criteria are not yet available in operational form. Work on cognitive analysis of curriculum activities has been done, but little or nothing has yet been published.[8] Other criteria are in immediate need of development, such as ways for ascertaining the "potential for synthesis" of proposals, described in entry 5 under "Content." (Maybe this one can be done on an intuitive basis.)

5. There is an assumption underlying this instrument that making a successful adoption is just as important as making the "correct" adoption. Criteria such as expectations of teachers and students, though not commonly mentioned as criteria in the literature, are tied to this assumption of a successful adoption. Likewise, some commonly mentioned criteria are omitted because they lack operational values. To check on "provisions for individual differences," a criterion not used here, it has been necessary to use such indirect criteria as those listed under "Students" (B-1, 2, 3) and "Content" (2, 3).

6. In the instrument which follows, a single asterisk indicates stress.

## The Instrument

DETERMINER #1: TEACHERS

A. *Expectations:* Teachers expect a curriculum proposal . . .

* 1. to be visible rather than promised, complete rather than available only in "broad outline";

* 2. to be sequential—not only divisible into parts such as grade levels, but already divided;

* 3. to be institutionalizable—packaged, conformable to standard classrooms and standard classroom management techniques, equipped with testing devices.

B. *Competencies*

* 1. Do teachers have the requisite competencies? Does the proposal make any provisions for finding out?

2. Can teachers acquire the requisite competencies? Does the proposal make provisions for finding out if such are acquired?

[8] Harry V. Scott. "Cognitive Analysis of a Curriculum: An Application of *Taxonomy of Educational Objectives: Handbook I; Cognitive Domain* to *Science—a Process Approach*." Unpublished doctoral dissertation, Teachers College, Columbia University, 1966. *passim*.

* 3. Does the proposing body offer means for providing teachers with requisite competencies—for example, institutes or visiting arrangements?

* 4. Are the needed teacher competencies explicitly stated? If not, do the curriculum materials make such inferences possible?

5. Are there alternate routes to having teachers with the requisite competencies? For example, can specialists do the job or can it be done by departmentalizing?

DETERMINER #2: STUDENTS

A. *Expectations:* Students expect a science curriculum . . .[9]

1. to have participation features (e.g., laboratory-like situations);

2. to confront them with certain topics (such as electricity, space, chemistry);

3. to confront them with specialized, esoteric language;

4. to be in visible form—not necessarily in books, but in materials of some kind.

B. *Competencies:*

* 1. Does the proposal check for requisite entering skills, and teach these if needed?

* 2. Does it evaluate progress systematically, frequently, definitely?

* 3. Does it state clearly (i.e., in behavioral terms) what is sought for students?

* 4. Do comparative data exist? Are there data on the relative advantages of the proposals under consideration?

DETERMINER #3: CONTENT

1. Are the goals visible, explicit?

2. How was grade placement of materials determined? Is the program complete, continuous, and sequential?

* 3. What is its cognitive profile? That is, what are the results of a cognitive analysis of the lessons of this curriculum proposal?

* 4. What is the source of the proposal? Who developed it? Using what process of development, what tryout techniques, what evaluation procedures?

* 5. What is its potential for synthesis? That is, can it subsume new materials as these emerge? Can it be subsumed under or into some larger framework?[10] Can it or parts of it be used in building units or in making up broad-fields subjects, etc.?

DETERMINER #4: METHODS

* 1. What are the relative emphases given to individual work, group work, whole-class work? (Number of lessons using each or time devoted to each or some other numerical determination.)

2. Complexity: Are procedures for teaching described completely? Are procedures predicated on today's teachers of this subject, and if so, do such teachers understand them? (Some trial teaching might be in order, without any in-service work or at least without any more than you can plan to give to all prospective users.)

3. Acceptability: Are the methods compatible with those of the parent discipline? (Does the proposal offer explicit, objective evidence that this is the case? If not, validation should be made by curriculum workers who might get consultation from scholars in that field.)

* 4. What kinds of options, and how many of each, are built in for the teacher?

(a) That is, how many lessons permit teachers to encourage students to work at any one of several cognitive levels?

(b) That is, must the teacher use all of the lessons and in the sequence given? If not, how many omissions and rearrangements can be made?

[9] Expectations must be phrased in terms of the content field under study.

[10] Such as a math-science course or a science-social science course or some course emphasizing key concepts and drawing from two or more disciplines.

DETERMINER #5: MATERIALS AND FACILITIES

1. Can the program costs be ascertained at this time? (Whether the costs are judged to be reasonable is an individual matter.)

*2. Can the program be adopted on a staggered schedule?

*3. Is the program complete? If not, when? Can all materials, instructional and evaluational, be obtained as part of the program?

4. Can materials be replaced by others that the user can supply or obtain?

5. Can the materials be seen in use somewhere? Easily?

6. Does a structure exist for updating and revising materials? (See also #4 under "Content.")

7. Does the proposal require major changes in facilities, such as structural building changes, heavy equipment, new furniture, additional storage space?

DETERMINER #6: TIME

*1. Can the amount of time needed for the program be ascertained in advance (within some limits)?

2. Can regular blocks of time be planned for the program? That is, is the program divided into blocks of approximately equal instructional time, of fluctuating amounts of time, or is it not planned in time blocks at all?

3. Have provisions been made for pacing the instructional program in some manner that approximates the paces of the students you will use in the program? Or, is the program described at a single pacing level, leaving the matter of individual pacing up to the teachers?

4. How are the time allocations made? That is, is a basic program described (with or without time factors considered) or are time allotments suggested for group work, individual work, etc.? (See also #1 under "Methods.")