An application of Gordon Mackenzie’s “Six Determiners of Curriculum”

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-


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. 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. 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. 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 and an occasional paper (mimeographed) from the Department of Curriculum and Teaching, Teachers College, Columbia University, which suggests guidelines for examining curriculum innovations. 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)


example, the criteria on expectations in
the sections called “Teachers” and
“Students” are mostly based on per-
sonal observation. (These criteria were
not casually selected, but other curric-
ulum 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 re-
search. Several are rather new inven-
tions.

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 expec-
tations, 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 activi-
ties has been done, but little or nothing
has yet been published. Other criteria
are in immediate need of development,
such as ways for ascertaining the “po-
tential for synthesis” of proposals, de-
scribed in entry 5 under “Content.”
(Maybe this one can be done on an
intuitive basis.)

5. There is an assumption underly-
ing this instrument that making a suc-
cessful adoption is just as important as
making the “correct” adoption. Cri-
teria such as expectations of teachers
and students, though not commonly
mentioned as criteria in the literature,
are tied to this assumption of a success-
ful adoption. Likewise, some commonly
mentioned criteria are omitted because
they lack operational values. To check
on “provisions for individual differ-
ences,” a criterion not used here, it has
been necessary to use such indirect cri-
teria 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 curric-
ulum 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 com-
petencies? Does the proposal make any pro-
visions for finding out?

*2. Can teachers acquire the requisite com-
petencies? Does the proposal make provi-
sions for finding out if such are acquired?
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?

Determined #2: Students

A. Expectations: Students expect a science curriculum...
   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?

Determined #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? Can it or parts of it be used in building units or in making up broad-fields subjects, etc.?

Determined #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?

* 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.")