The Case for Structure

Sydelle D. Ehrenberg

A case for structure in curriculum is made here through describing a process of thinking about fundamental curriculum questions and about the product of that thinking.

From the title, the reader might expect that the focus here would be the virtues of structure as the one "right" way to replace current curriculum confusion, ineffectiveness, and inefficiency with order, effectiveness, and reason. To take this position, however, would be to indulge in yet another futile *versus* debate (for example, content *vs.* process, interest *vs.* subject matter).

Since people are rarely moved by a disciple's impassioned defense of his or her own point of view, a better case for structure in curriculum may be made by describing a process of thinking about fundamental curriculum questions and about the product of that thinking. This approach may afford readers the opportunity to clarify their *own* views about curriculum issues and thereby construct their own cases *about*, rather than *for* or *against*, structure in curriculum.

Institute for Curriculum and Instruction

This search for workable answers to fundamental curriculum questions arose in the context of the work being done nationally by the Institute for Curriculum and Instruction [1] with selected school districts that were and are interested in using effective procedures to achieve their learning objectives for students. The focus of the Institute's efforts is advancing the work pioneered by Hilda Taba and others, by applying many of their principles and procedures to a practical model for curriculum development and implementation.

The strategies comprising the model are:

- Based on sound learning principles;
- Generic to any area or level of curriculum; and
- Capable of implementation, in that the model provides for necessary training during all phases of curriculum development and for utilization at the building and classroom levels.

Answering Critical Questions

The critical questions that we at the Institute have had to address in the development of this model are:

1. What is curriculum and what is its purpose?
2. When learning is the object of curriculum, rather than a subject of psychological research, what is meant by "learning"?
3. What must curriculum contain in order to achieve its purpose?
4. What are the critical requirements of anyone responsible for curriculum development and/or implementation?

What follows are our current responses to these questions along with the line of reasoning used to arrive at them. These responses are reflected in the Institute's model for a structured curriculum. Our principal references have been:

1. The ideas of Taba, as expressed in her

[1] The Institute is located at 3050 Biscayne Boulevard, Suite 803, Miami, Florida 33137.

book, *Curriculum Development: Theory and Practice*[2] and in reports of her research projects, coupled with the recollections and experiences of individuals who worked closely with her;

2. The experiences of the Institute's staff derived from working during the past ten years on problems of curriculum and instruction with teachers, administrators, and curriculum developers in numerous school districts throughout the country; and

3. Dialogue with local curriculum leaders about their objectives for students and the effectiveness of the parts of the model they are using.

Importance of Planning

Taba called curriculum *"planned* learning"; we refer to it as *"any* plan for learning." This is not to suggest that we think valuable learning cannot and does not occur as a result of unplanned experiences, but rather, that we believe that the learning outcomes of random experiences are likewise random and, consequently, unpredictable. We would say, therefore, that if one has no particular learning outcomes in mind, no particular curriculum is needed! If, however, one is committed to or responsible for achieving particular learning outcomes, the likelihood of bringing them about without a specific plan is exceedingly remote. Since there seems to be little debate over *whether* learning objectives need to be achieved, it would seem that the issue is not a matter of *if* there needs to be a plan for learning, but rather, what *kind* of plan is needed.

The controversy over formal *vs.* informal and structured *vs.* unstructured curriculum seems to center around whether or to what extent the specifics of the plan should be prescribed or merely suggested. Proponents of structure argue that it is efficient and effective in achieving learning objectives; opponents argue that side effects make the achievement too costly, in that structure inhibits accomplishment of the collateral goals of individual growth, creativity, and involvement.

It seems to make sense that *the nature of the learning outcome dictates the amount and kind of structure desirable.* But rather than precluding the achievement of collateral goals, we see structure as *essential* for their realization. The various means for attaining collateral goals need to be incorporated into curriculum so that they can become a continuing and integral part of the learning process rather than considerations that are injected randomly because of their inherent "goodness."

What one would decide to be the characteristics of the "right" kind of curriculum (plan) would depend, basically, upon: (a) what one thinks "desirable" learning *is*, and (b) what one believes about how, or by what process, such learning occurs.

Formulating a Plan

While learning may be defined generally as "change in behavior," in our view, learning, as the purpose of school curriculum, does not mean just any change in any behavior. Our examination of the learning objectives identified by school districts indicates that the learnings they consider desirable and seek to achieve are particular changes in student behavior that: (a) are discernible; (b) are complex—requiring gradual, long-term growth and development toward certain *human* characteristics; and (c) are the result of the cumulative acquisition, integration, and application of particular knowledge, attitudes, and skills.

The demand on the school district, then, is to provide a developmental plan for the *cumulative* achievement of particular kinds of learning. The content and organization of the *means* to be employed toward achieving such *ends* depend upon a curriculum planner's concept of the process of learning.

Following Dewey's Maxim

Underlying much of Taba's thinking and work, and that of the Institute as well, is Dewey's maxim that: "Learning results from doing." While the deceptive simplicity of this idea has, through careless interpretation, led to some rather inane educational practices being followed in its name, its truth remains unscathed. The more we probe its meaning

[2] Hilda Taba. *Curriculum Development: Theory and Practice.* New York: Harcourt Brace Jovanovich, Inc., 1962.

Students in this class "learn by doing" as they express themselves in dance. Author Sydelle D. Ehrenberg stresses the importance of the "doing" principle to fulfilling and meaningful learning. Photo: Joe Di Dio, National Education Association.

and implications, the more we find it a most valuable guiding principle, particularly for clarifying our position with regard to the process of learning.

Although it can be shown that learning does, indeed, result from doing, "doing" needs to be more than mindless motion if it is to result in the kind of learning sought through education. To result in the cumulative development, integration, and application of particular concepts, generalizations, attitudes, and skills, "doing" must involve the use of *particular kinds of intellectual operations that are focused on particular kinds of information.* For example, to merely watch a game of tennis being played, though "doing," is not likely to result in learning much about tennis or about how to play it if:

1. One cannot or does not use the mind effectively to obtain and store information about what is being done and how it is being done; and/or

2. One is focused on the tennis players' outfits rather than on their game; and/or

3. The game is not being played as it should be.

Second, although learning results from doing, it does not necessarily follow that *particular* learning results from *any* "doing." Consider again the example of tennis: One does not learn to play by only reading about the game. Reading is not enough of the right kind of "doing" to result in tennis-playing skill; skill learning requires performance practice as well. Furthermore, learning to play tennis well enough to compete professionally would surely require additional kinds of "doing" other than that needed to learn to play for recreation. However—to learn about the rules of tennis playing—observing, reading, or listening *alone* may be enough of the right kind of "doing."

Third, complex behavior change such as that represented in statements of long-range educational goals for students is not likely to result from the random "doing" of isolated bits and pieces of the total behavior. Rather, complex learning would seem to require that each bit of "doing" should represent an increment in accomplishment toward achieving the broader goal, and should be integrated with the other parts of the behavior that have developed to that point. Again, learning to perform each individual tennis-playing act in isolation and in

random sequence is not likely to result in a skillful performance in an actual tennis match.

Qualifying the Principle

Therefore, for the purpose of making the "learn by doing" principle more useful to our model, we have qualified it to be: *"Particular, complex* learning results from *sufficient, appropriate, and sequenced* doing with *sufficient and appropriate* data."

From this qualified principle, we reason that for curriculum to be the "right" kind of plan for achieving any *particular* learning it would have to specify as a minimum:

1. What the learning *is*, that is, what it looks like when accomplished to the desired quality and/or degree;

2. How much and what kind of data must be available to the learner;

3. How much and what kind of "doing" with relevant data is required of the learner, physically and intellectually, to produce the learning to the desired quality and/or degree.

Defining Curriculum

Applying this qualified and expanded "learn by doing" principle to the earlier definition of curriculum, we arrive at the following, more definitive statement:

Curriculum is a plan that describes the necessary and sufficient "means" for achieving particular learning "ends." Its purpose is to specify the amount and kinds of resources and "doing" experiences that must be provided to learners for them to have sufficient and appropriate opportunities to develop specified learnings to the desired quality and/or degree and with as many secondary gains and as few negative side effects as possible.

Such a purpose suggests that curriculum should be structured to include the elements that follow.

A. Learning Objectives with Rationale Stated

Curriculum should describe the learning being sought—clearly indicating what the learned behavior looks like at the desired level of quality—including the *reasons* students must or should achieve the learning. Unless the learning that is being sought is clear, there is no way to determine the resources and learning activities needed, how they should be organized, or the results they may bring about. Without a stated rationale, no one involved in the instructional process can develop a commitment to follow the necessary steps to achieve the learning objectives.

B. "Means" for Achieving Learning Objectives

Curriculum should provide a detailed description of all that is needed, particularly that which both learner and teacher need to *do* in order for the learning objectives to be achieved. The "means" include:

1. *Content Information:* Data samples related to what is to be learned.*

2. *Instructional Materials:* Reference to vehicles for delivering the needed data samples to the learner (for example, particular textbooks, films, tapes, teacher lectures, and resource persons or places).*

3. *Sequenced Learning Activities:* Description of what students need to do, according to the kind of learning that is to result. In general, the sequence, regardless of type of learning, usually involves some rotation of data-gathering/retrieval acts, data-processing acts, and acts requiring application of knowledge and/or skills. The specific sequence of acts that is needed depends upon the kind of learning involved. For example, concept development requires a *particular* sequence of *particular* learning acts that differs considerably from the sequence of learning acts required for skill development. The requirements for concept development differ from those required for attitude development, and so on.

The sequence described is what the curriculum planner believes to be the order of intellectual operations the learner needs to

* In specifying the first two elements listed above, the curriculum planner should clearly indicate what, generally, is needed for the learning to result and should provide appropriate alternatives. Within this structure, "implementers"—principals, teachers, and other professionals, with additional input from students and parents where appropriate—should then make specific selections based on local preferences, on availability, on the particular instructional setting, and on the needs of the particular learners involved.

experience in order to achieve the specified learning. If there is *no* sequence (that is, if activities are neither specified nor included, but are randomly ordered—with the teacher making *any* selection), then there is no specific *plan* and no reasonable basis for predicting that the desired outcomes could result. However, this is not to say that there is only *one* effective way to sequence learning acts for a given type of learning. Alternative sequences are certainly possible and desirable, but each alternative sequence must be designed to provide students with the opportunity to experience the sufficient and appropriate "doing" necessary to achieve the specified learning.

4. *Instructional Sequence of Teaching Strategies:* Description of what the teacher needs to *do*, in what order, to provide students with the learning opportunities they need to achieve the learning objectives. This, generally, involves the sequence of teaching acts needed to: (a) diagnose learning needs related to the objective, (b) provide needed remediating experiences, (c) provide the appropriate learning and application experiences, and (d) assess growth toward the achievement of the learning objective. Specifically, we should concentrate on teacher questioning strategies, management strategies, and other strategies.

More often than not, strategies are only implied in the description of student learning activities, the assumption being that the teacher will somehow know what to do and how. While the teacher still must develop specific plans that are appropriate to the particular teaching/learning situation—without specific guides as to what, *generally*, the sequence of teaching acts needs to be, the curriculum is not likely to be implemented as intended.

The curriculum should provide the appropriate structural framework for the desired learning to result, but within that framework, there can and should be abundant room for creativity and professional judgment in designing individual activities that meet the curriculum purpose.

C. *Criteria for Evaluating the Curriculum*

Curriculum needs to describe the criteria and, possibly, ways and means to be used for determining the worth of the curriculum. Among the issues that must be dealt with are:

- Validity: Does the use of the described "means" result in the described learning?
- Reliability: Does the use of the described means consistently produce the desired learning?
- Usefulness: Can the described means be implemented by those who must implement them, in the setting in which the learning needs to take place, with the available resources?
- Secondary gains and/or side effects: What concomitant learnings are resulting from the means being used?

Continuing Challenge

The limits of time and space have permitted no more than a synopsis of our thinking about a few basic questions related to curriculum development, those which have yielded our point of view about the role of structure in curriculum design. To say that these remarks just scratch the surface is to understate the case.

Our experience indicates that designing and implementing a curriculum that incorporates and organizes the elements described is a continuing challenge worth the effort, but that it requires of those involved:

1. Clarity about and commitment to particular learning outcomes for students;
2. Knowledge and skills related to the fundamental learning processes (for example, conceptualizing, skill development, and others) and to the teaching strategies necessary to involve students in these processes;
3. Knowledge and skills in strategies for curriculum development and implementation;
4. Willingness to give the task the necessary priority and to expend the required time, effort, and thought to accomplish it.

As we continue to test and refine tentative answers to the many difficult questions involved, we are finding greater and greater reason to support the case *for* structure in curriculum.

Sydelle D. Ehrenberg is Associate Director, Institute for Curriculum and Instruction, Miami, Florida.