

## ● Research in Review

Column Editor: James B. Macdonald

### Research and Curriculum Development: Some Issues

BERNARD SPODEK

IN RECENT years, a new model for curriculum development has become prevalent. We have seen the establishment of national curriculum development projects whose products are offered to the schools. The science and mathematics projects of the past decade are examples of this trend as are many of the new compensatory education programs for disadvantaged children.

In each case a new curriculum, generalizable to many school situations, is developed and tested within a research framework. Once developed, the curriculum may be made available in a variety of forms for adoption by local school systems. This new trend can be contrasted with the more traditional approach to curriculum development in which a school system convenes an internal committee of practitioners to devise programs suitable for a particular school system, or where school systems may adopt a program based upon the purchase of a set of textbooks.

While this emerging pattern of curriculum development has many advantages in its favor, the relationship of

these research-development projects to the process of curriculum adoption at the local level raises a variety of issues, some of which will be dealt with in this column.

#### Behavioral Goals and the Curriculum

Educationists prescribe a variety of goals for the curriculum of the school, ranging from the development of very specific observable skills such as learning to spell a list of words correctly, to vague generalized goals such as the development of democratic values and attitudes, the manifestations of which may not be directly observable in a school situation. The degree of importance attributed to each curricular goal is generally a function of the relationship of that goal to the ultimate objectives of education. The research oriented educator once involved in a curriculum development project is often less directly concerned with the ultimate goals of education and becomes more concerned with providing data that demonstrate that the proposed curriculum is an effective one.

Atkin, in discussing the science curriculum projects, has asserted that "those engaged in curriculum development are exhorted to assess learning in terms of readily observable and measurable behavioral changes in students" (1). The suggested research model in such curriculum projects provides for the evaluation of curriculum proposals based upon the degree of behavioral change related to the student's involvement in the new curriculum. Often due to the economics of educational research as well as the difficulty of assessing the antecedents of long-range behavioral change, only short-term changes in student behavior are assessed.

While the process of defining behavioral objectives for a curriculum is a fruitful one, there is danger in only using observations of short-term be-

havioral modification to assess a new curriculum. Too often the most significant goals of an educational program cannot be stated easily in terms of observable behavior. For example, science educators, in developing their new curricula, are concerned with the development of positive attitudes towards science and scientists as a product of their program. Such attitudinal shifts are difficult to assess when only behavioral data are collected, although such data as teachers' opinions or a logical assessment of the program might provide another useful form of evidence.

The deeper issue concerns the fact that in such program evaluation the present status of technology in the area of educational measurement and evaluation may determine the goals of experimental curricula. When the criteria for determining the goals of an educa-

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tional program are the observability and measurability of the achievement of these goals as manifested in observable behavior, then programs tend to become restricted, often geared to the achievement of goals of lesser significance.

This process needs to be reversed. Experimental curriculum projects need to reflect educational sophistication as well as experimental sophistication. Significant educational goals need to be established while measurement experts are admonished to provide the best assessment of the achievement of these goals that is possible.

This would probably require the collection of subjective as well as objective data and the use of data that are not subject to statistical analysis. Methods of data collection and analysis that are used ought not to limit the generalizability of such curriculum projects, but would rather free the curriculum researcher to deal with a broader range of educational objectives.

### **Labeling and the Curriculum**

When research oriented curriculum proposals are made available to school systems for adoption, the curriculum worker seeking knowledge about the program is dependent upon the data provided in reports or articles. Often the evaluation is an oversimplified, unidimensional one in which students studying the new curriculum are compared with a similar group studying a more traditional curriculum. If the difference in achievement levels is statistically significant, the new curriculum is considered successful. The holistic reporting of results often leads school systems either to accept all curriculum

innovations as good, or to reject all curriculum innovations until they have been tested within the local school system.

Both these behaviors are inappropriate. The justification for educational research lies in the development of a body of knowledge that is generalizable to situations having the same significant elements as the researched situation. Both the overgeneralization of results and the fear of transferring results from one like situation to another limit the development of a body of usable knowledge in the field of education.

The problem often stems from the inadequacy of the evaluation data available to research workers as a basis for making curriculum decisions. A host of questions, other than those that revolve around the achievement of limited goals need to be answered. What degree

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of failure as well as success was observed and ought to be expected? What were the learning characteristics of the children involved in the evaluation program? Is the program equally effective with educationally gifted and disadvantaged children? With urban and rural children? Were there any side effects noted in the application of the program? Did the program affect self-concept, socialization skills, or motivational patterns as well as school achievement? The answers to such questions provide the other dimensions that need to be considered before curriculum decisions can be made.

Teachers who have worked with groups of children are aware that no single approach works equally well with all children. Children vary in ability, in learning style, in academic background, in developmental rates as well as in other dimensions that affect their ability to profit from a program. One of the important elements in good teaching is the assessment of human variables and the provision of specialized approaches to meet individual needs. A good teacher tailors the program to the children in his class. Most teachers will, at the very least, modify the pacing of the curriculum according to the child's achievement level.

New curricula can provide teachers with a broader range of educational alternatives than is presently available. While a new program might not be suitable for mass adoption, it may provide a valuable alternative to the traditional program for some children. Flexibility can be an outgrowth of curriculum research projects when there is an adequate reporting of the many dimensions of achievement that can be

assessed. Atkin has suggested the need for appropriate labeling of new curricula to provide the information necessary for decision making by curriculum workers, using the model of a "Pure Food and Drug Act" (2). Curriculum researchers would be expected to submit data about the effectiveness of a program for achieving its stated aims, the limitations of its applicability, and the side effects that might be anticipated. Such labeling has been considered necessary in the field of medicine, as new drugs have been developed and marketed. Perhaps the time is ripe for similar procedures in the development and marketing of new curricula.

New drugs must go through rigorous testing before a judgment is made as to their usefulness and safety. A cure for cancer which stops the growth of cancerous cells, may not be marketable if it also stops the growth of noncancerous cells. The effectiveness of the drug in achieving its stated aim is inadequate to qualify it for approval in such a situation. Antihistamines will cause drowsiness, thereby limiting their usefulness for those who require maximum alertness. An effective drug, safe in most situations, may prove unsafe in others. Other drugs may cause allergic reactions in some persons, thereby limiting their effectiveness to specific populations. The knowledge of the various effects of drugs allows the practicing physician to prescribe remedies based upon knowledge of the ailment, the treatment, the patient, and the situation.

The educational practitioner cannot presently prescribe with the same degree of effectiveness simply because the kinds of data that would allow him to

individualize his educational treatments are not provided by educational researchers. Curriculum researchers are often too concerned with global effects, reported as measures of central tendencies, to provide the necessary specific data. Were there a requirement for effective labeling, as previously suggested, there would be a greater tendency to accept or reject new curricula based upon the appropriateness of the fit of the suggested program to a specific population of students.

### **Values and the Curriculum**

Researchers generally concern themselves with technological questions, assessing the consequences of certain educational practices. Questions dealing with value issues cannot be answered through the research process. Yet the

value issue provides the base of the decision that the curriculum worker makes. The research oriented curriculum projects of the past few years have not concerned themselves with developing more efficient ways of teaching the same content; they have suggested that new content be taught. The value assertion that the new content is *better* than the old, is often accepted without adequate analysis. No evaluation of curriculum innovation is complete without an exploration of the value component underlying it.

New programs of compensatory education, for example, are being proposed and tested at various centers throughout the country. Each of these programs will soon be vying for inclusion in school systems that have identified disadvantaged children in their pupil pop-

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ulation. These programs cannot be evaluated without assessing their value assumptions as well as their effectiveness.

The concept of compensatory education suggests that intensive educational treatment in areas of academic deficiencies will help disadvantaged children become more successful students. Given the organization of schools, such intensification in one area of the curriculum usually requires a lessening of concern with other areas. A program focused on language and cognition may provide little outlet for self-expression, the development of self-concepts, or the learning of social skills, all of which are included in the goals of general education. The compensatory curriculum is an unbalanced one in which the development of certain objectives may block the successful attainment of other objectives. In the example cited here, the value base suggested is that reading and thinking skills are very important while learning to live with others, or learning to develop methods of self-expression is relatively unimportant.

The curriculum worker deciding on the adoption of a program in compensatory education gives tacit approval to the values underlying the program. If the curriculum is an effective one, it can modify the child's school career and ultimately his life. Such decisions need to be based upon more than information about the ability of the innovative curriculum to achieve its stated goals. Since education as a human enterprise is value laden, the assessment of curriculum research and the making of de-

isions based upon such research is likewise a value laden activity. The value decision rests in the hands of the curriculum worker rather than the researcher. To the researcher, the research process, with its concomitant development of increased knowledge is a valuable process in itself.

The process of assessing curriculum research and making decisions about the inclusion of curriculum innovations in programs for children is a difficult one. The curriculum worker, a practitioner by definition, is to a great degree dependent upon the curriculum researcher. In order for the curriculum worker to be able to make proper decisions he must require that the researcher provide him with a necessary base for decision making. Such a base includes the definition of curriculum objectives consonant with the goals of the school, the communication of the results of curriculum research in broad dimensions that would enable the practitioner to make prescriptions based upon matching learners to curricula, and the baring of the value basis of curriculum innovation for exploration and reflection.

#### References

1. J. Myron Atkin. "Some Evaluation Problems in a Course Content Improvement Project." *Journal of Research in Science Teaching* 1: 129-32; 1963.

2. J. Myron Atkin. Personal communication.

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