Column Editor: James Raths

How Shall the Curriculum Specialist Greet Research?

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NEW educational programs are sweeping the nation. The recent increase in educational research activities and the popular clamor for educational innovations place new demands upon the curriculum specialist. To improve school curricula, he must identify and adopt for his district those programs which are effective. How shall he evaluate the new programs? Three procedures are described below which should guide the curriculum specialist in evaluating curricular innovations and in applying research findings to improve educational practice.

1. *He should not confuse mere innovation with educational improvement.*

When *Peanuts'* Lucy said she was thinking of starting something new, Charlie Brown replied that it was a good idea because those who get the most out of life are those who try to accomplish something. Lucy was astounded, *"Accomplish* something? I thought we were just supposed to keep busy!"

Most innovations in curriculum are designed to accomplish something. The difficulty is that sometimes the goal desired is not an instructional one. Innovations may be adopted for economic and political reasons, as well as for instructional purposes.

Consider political goals, for example. A principal or superintendent may need a slogan such as "nongraded classrooms" or "inquiry training" in order to salve the concerns of parents that their school is indeed in the forefront of progress. Or, in the current educational climate, what teacher would admit that he does not use a "problem-solving approach"? For political concerns it is more important that the educational program or innovation bear a popular rubric than that its procedures and outcomes differ significantly from earlier programs. What matters most in such cases is the public consequences of the particular innovation. Does it result in more support for the school?

Economic considerations are also frequently responsible for curriculum innovations. In recent years the availability of special funds for a variety of educational programs has resulted in numerous innovations and furious activity among school district personnel

to formulate additional programs. Similarly, budget limitations have on occasion been responsible for the adoption of new patterns of classroom grouping and school scheduling.

The curriculum specialist is rightfully more concerned with the instructional consequences of educational innovations than with their political and economic purposes. He must be able to describe precisely the specific materials and procedures involved in the new curriculum and what will constitute evidence that learner performance has been affected by the innovation. Kowitz and Hausdorff (3) have found that many school personnel cannot state the difference between the instructional process of an innovation and desired outcomes of the innovation. Equally serious, innovations in administrative patterns such as grouping or scheduling practices do not necessarily alter significant factors in instruction. Too often, such programs are evaluated on their appeal to the public and school personnel, with little consideration given to the learner's achievement under the program. The curriculum specialist must specify the instructional variables and goals of curriculum innovations with precision, and he must take care to evaluate them by empirically assessing their impact on learners.

Any innovation whose instructional procedures and goals are not specified with precision has little utility for school curriculum purposes. A case in point can be found in Wittrock's (10) critique of experimental literature regarding "Learning by Discovery." His review shows that there is no common definition of learning by discovery. Although the names *rote* and *discovery* are laden emotionally in opposition to each other, in actual practice it is difficult to distinguish a rote treatment from a discovery treatment. Thus, the concepts of rote learning and discovery learning will have little usefulness for the curriculum specialist until he can specify each in terms of the discrete operations involved. At that time he can implement each procedure and assess it in terms of such instructional outcomes as (a) kinds of problems children can solve, including the ability to solve both new instances of the class of problems introduced and problems much different from those encountered during instruction, (b) ability of pupils to generate problems, and (c) the methods pupils use in solving problems that they would otherwise not have used.

Those who believe that assessment practices restrict curriculum to the trivial and the mechanical should read Maccoby's (4) account of the Cornell introductory course in the social studies. In addition to presenting a moving description of an innovative course dealing with poverty in America, the report illustrates how samples from the oral and written work of students can reveal profound changes in their higher cognitive processes and expressed attitudes and motivation. Instead of only offering stimulating learning experiences and assuming that desirable things subsequently followed, the instructors of this course collected evidence that revealed the strengths and weaknesses of their innovation.

In the days ahead we will hear of more bold new ideas such as the moving of pupils among several schools, modular curriculum that allows part-

time instruction, and additional instructional packages carrying fine names like creativity and citizenship. Even in cases when the latent purposes of these innovations are political and economic, we must not neglect assessing their instructional consequences.

2. *He should be prepared to accept research findings that upset his opinions.*

Some of our common-sense notions regarding the effects of selected teaching practices are being challenged with evidence from experimental studies. Investigators (9) studying effects of increasing the numbers of examples in learning difficult aspects of a task found predictably that more examples were better than few; less predictably they found that the value of adding more examples was greater for the more intelligent student than for the less intelligent. Pimsleur *et al.* (7) surprised some when they demonstrated that pronunciation of a foreign language could be enhanced by practice in saying the foreign sounds before learning to evaluate (recognize) correct and incorrect pronunciation. Heretofore, many had assumed that discrimination training which led to recognition of correctly pronounced foreign sounds was a prerequisite to successful practice.

McNeil and Keislar (5) have shown that silent reading can be more successfully achieved through a teaching process that calls for oral responding (saying words out loud) than from a non-oral teaching process whereby children remain silent (i.e., do not vocalize words during instruction). An early study of Cox and Anderson (1) revealed that the longer the teaching experience of the teacher, the less she was likely to handle a classroom problem in a way to reduce the difficulties. More recently, Popham (8) in two carefully controlled experimental studies failed to confirm the prediction that experienced teachers would promote better achievement of given instructional objectives than would non-teachers.

All of us hold many opinions about education based upon common sense and our own personal biases and experiences. The curriculum specialist must be prepared to accept and apply experimental research findings which suggest potential improvements in educational procedures, even though the findings may be contrary to his previously held opinions.

3. *He should try to utilize research to improve instruction.*

Educational journals frequently report findings such as the following:

(a) Little boys start more fights, make more noise, take more risks, think more independently, are harder to educate, and are more fragile than little girls. They are more likely to stutter, to have reading problems, and to suffer emotional quirks of every sort (6).

(b) When we compared the childhood recollections of the 508 prospective lower, middle, and high school teachers in our study, we found that father was more often recalled as a friend and influence among prospective lower school teachers, and teacher was more often a friend, influence, and hero among prospective high school teachers (11).

The above items are reported research findings. In order for this information to contribute to curriculum, one would have to draw implications from it and specify a curriculum objective or

instructional practice that would logically follow. In the first example, should we try to alter the characteristics of little boys (formulate a new objective)? Or should we try to take their present behavior patterns into account as we select learning activities in order to more effectively reach presently established objectives (formulate different instructional means)?

Consider the second example. Is it important to a supervisor of curriculum and instruction to learn that women preparing to teach in elementary schools differ from those preparing to teach in high schools with respect to basic orientation to life, and that the lower school woman might have been shaped by a "father romance" while the high school woman teacher's childhood is likely to have been affected by a "teacher romance"? What would *you* do with knowledge that the typical high school teacher might be too ready to dismiss her pupils' parents, particularly their fathers, as inimical to the pupils' progress? And what difference does it make to conclude that the elementary teacher relates to paternal male principals as a daughter but experiences conflict with female teachers and older women teachers who resemble mother?

Research is of most use to the curriculum specialist when it identifies or suggests school programs that will enhance student performance. Descriptive research findings such as "children who have inadequate self-concepts are low achievers" are frequently of no instructional value. They often function best as excuses for our failure to teach children ("We couldn't expect more from him—he has dyslexia." "Just look at his mental age!").

Occasionally, descriptive studies suggest procedures that can be introduced to ensure the achievement of those who are not now progressing. For example, data from a study by Jensen (2) represent a source for designing effective instructional procedures for a specific group of learners. This investigator was able to show that Mexican-American children with low IQ's could perform as well as high IQ Anglo-American children on three kinds of learning tasks after instruction with materials where language facility was not the crucial variable and where the materials were equally familiar to children of a variety of subcultures. Jensen's study revealed that many children who are labeled by intelligence tests as mentally retarded are actually quite normal in basic learning abilities and they can be taught effectively when we vary our procedures. The point to be made here is that although it is quite proper for psychologists, sociologists, linguists, and other academicians to interpret aspects of schools and to study objects of school concern, their findings and conclusions require application studies before we will know what and how to teach.

In reviewing "educational" studies written by scholars in selected fields, the curriculum specialist should continually search for curricular implications, design plans in accordance with these implications, and above all, seek ways to observe their consequences. He cannot assume that all researchers laboring in school settings are competent to draw curricular implications,

let alone measure results of enacted programs. Much of the research taking place in schools today is better sociology, psychology, and linguistics than it is pedagogy.

Perhaps it is true that when an academic specialist begins to work in curriculum, he finds the problem too difficult and realizes that he cannot even conceptualize what would make an acceptable instructional solution. Therefore, he narrows the problem to fit his own competency, something like the policeman in a popular story who found a dead horse on Chartreuse Street. The policeman had to make a report but couldn't spell *Chartreuse*. What to do? He dragged the horse over to First Avenue.

Curriculum specialists, keep your eyes on the curriculum questions!

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