Curriculum Research

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The Teacher as a Researcher

ONE OF THE characteristics of our present society is its developing tendency to become more technological and to become progressively more influenced by the products and the methods of science. As a whole population, we have become accustomed to terms such as "nuclear fission" and "supersonic." We are able to absorb the idea of a man-made satellite encircling our world, and we make few arguments against the point of view that progress is, indeed, our most important product. At various times we have observed, particularly during our national elections, the feeding of data into an electronic brain which makes mathematical predictions. And we have learned to use the predictions which come from this product of our scientifically-oriented culture.

Within the context of this society, which has learned to question, it is possible that much of the current widespread questioning of the purposes and methods of the public schools may be but an expression of the common man's insistence on looking for proof and seeking for reasons. There would seem to be some evidence that the criticism of the schools is a part of the American public's looking into many aspects of public life which would include politics as well as community organizations. It would be strange, indeed, if such a newly developing social phenomenon were to have no impact upon the public school.

But the school *is* responding to the broad forces which are shaping the social milieu around the school, as it has always done. During the last quarter of a century, beginning with the 'thirties, educational research seems to have passed through some interesting phases. During one early phase, educational research seemed to be discredited among the teachers. At present, the research idea seems to have regained status and is more and more regarded as a trustworthy operational procedure.

There is one impressive difference, however, between the earlier "traditional" concept of educational research and a newer viewpoint on research in education that is just now in process of being formulated. This difference may be located by looking at the double-pronged question of what researchable questions are of value to those who do the teaching, and who should be the researchers in carrying out the indicated research? These questions are being answered through movements which tend to broaden the base of professional understanding of research and to widen the former "select circle" of those who do the research.

It has been stated[1] that a tradition has grown up which holds that research is not an activity in which amateurs can engage; that the practitioners in educa-

[1] Fred P. Barnes. *Practical Research Processes. A Guidebook in Research Methods for Practitioners in Education.* Springfield, Illinois: Illinois Curriculum Program. (mimeographed draft) p. 67.

tion, the teachers, have avoided engaging in research activities of their own; and that the total "acceptable" research that has been done by students in education or related life sciences has exerted relatively little impact on the improvement of teaching.

A casual survey of reported research will bear out quickly the validity of the first part of this statement. Practitioners do not carry out many research activities. The validity of the portion of the statement regarding the impact of research on the improvement of teaching would call for closer examination. Two points may be made, however, which indicate that the statement would be valid. First, it cannot be expected that practitioners in education will be greatly influenced by either findings or pronouncements that they have not had some part in clarifying for themselves. Our great attention in recent years to "grass-roots"

approaches to curriculum improvement has been based upon the validity of this assumption. The second point, and related to the first, is that research focused upon the improvement of teaching is not taking place anywhere and certainly not in great amounts by the practitioners.

Competences Needed

The logical next question would have to relate to the preparation and the competence of the practitioner to carry on research activities. A recent analysis of this question advances the notion that teachers do possess many of the competences required of researchers.

This analysis follows:

Most teachers, as a result of their academic preparation and their arranging learning materials for deliberate classroom use, have learned a preference for ordering their planning for teaching along the lines of the chain of events encountered in reflective thinking. This is a high level of thought that rules out mere capricious choice of possible actions to be taken, and depends, instead, on the recognition of probable consequences of alternative actions, as a guide to problem solution. The process of reflective thinking then demands a follow-up of actions chosen to find if the consequences anticipated did in fact, and to what extent, occur. Is this not similar to the "chain of events" in planning a lesson to be taught? First, the problem of an always-unique group of students, then the choice of a way to best present the learning material to the particular group, and then an appraisal of whether the choice made did result in gains anticipated. And is this not the "way to think" that learners are taught to develop? This higher level of thinking, through the numerous and deliberate efforts of professional organizations, college and university programs of teacher preparation, and the modern culture surrounding the schools, has come to represent—verbally, at least—the way teaching should be organized, and the way learning should proceed. In one form or another, educational practitioners have come to recognize and use the rational steps involved in reflective thinking. In 1933 John Dewey presented a formal

analysis of this higher level of thinking in his book, *How We Think* (D. C. Heath and Company). There is reason to suppose that in the two decades since publication of that book, educational practice and, indeed, the modern world have been greatly influenced by the methodology of reflective thinking and scientific investigation — which are highly similar. There is reason to suppose that modern school practitioners may have encompassed, in their daily work, a utilization of methodical thought far superior to 1933 hopes and aspirations. If there exists even a rough degree of verity in these observations, then school practitioners are much better prepared as researchers than is commonly supposed—for the principles of reflective thinking, of teaching, and of scientific method have much in common.

The regularities that characterize these three phenomena may be pictured in chart form:

Steps in Reflective Thought

1	2	3	4	5
Awareness of perplexing situation	Defining the difficulty	Proposing a hypothesis for problem solution	Reasoning out implications of the hypothesis	Testing the hypothesis against experience

Steps in the Teaching Process

1	2	3	4	5	6	7
Awareness of general goal-directed teaching-learning object	Assessing state of affairs and diagnosing needs within the group	Selection of activities to meet these needs	Carrying through the activities planned	Evaluating the success (or failure) of the activities	Reassessing	Replanning

Steps in the Research Process

1	2	3	4	5	6	7
Sensing the problem area	Defining the specific problem	Formulating a hypothesis	Designing the test of the hypothesis	Obtaining evidence	Challenging and generalizing the data	If necessary, re-test

—Reflective thinking aims at a conclusion to the original problem, validated by observations outside the chain of ideas in the process.

—The teaching process aims at finding better ways to control the teaching-learning act.

—The research process aims at discovering and testing new ideas.[2]

The Illinois Curriculum Program is now engaged in a project which assumes that teachers can be researchers and that it is possible to establish the relationships which join the teaching and researching processes. If the research process is clarified, the individual teacher can utilize research procedures to improve individual practice and to join with other teachers in solving instructional problems and improving teaching.

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[2] *Ibid.*, p. 3-4.