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RELATING THEORY TO PRACTICE
IN EDUCATIONAL RESEARCH

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Institute for Research on Teaching

The **Institute for Research on Teaching** was founded at Michigan State University in 1976 by the National Institute of Education. Following a nationwide competition in 1981, the NIE awarded a second contract to the IRT, extending work through 1984. Funding is also received from other agencies and foundations for individual research projects.

The IRT conducts major research projects aimed at improving classroom teaching, including studies of classroom management strategies, student socialization, the diagnosis and remediation of reading difficulties, and teacher education. IRT researchers are also examining the teaching of specific school subjects such as reading, writing, general mathematics, and science, and are seeking to understand how factors outside the classroom affect teacher decision making.

Researchers from such diverse disciplines as educational psychology, anthropology, sociology, and philosophy cooperate in conducting IRT research. They join forces with public school teachers, who work at the IRT as half-time collaborators in research, helping to design and plan studies, collect data, analyze and interpret results, and disseminate findings.

The IRT publishes research reports, occasional papers, conference proceedings, a newsletter for practitioners, and lists and catalogs of IRT publications. For more information, to receive a list or catalog, and/or to be placed on the IRT mailing list to receive the newsletter, please write to the IRT Editor, Institute for Research on Teaching, 252 Erickson Hall, Michigan State University, East Lansing, Michigan 48824-1034.

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Abstract

The concept of method evolving at the IRT combines many approaches describing teaching and classroom life. At IRT, the belief is held that the methods of disciplined eclectic are the appropriate tools for developing middle-range theories, or for solving practical problems of training or dissemination. By describing the Intellectual Forum, the IRT's central unit, the author explicates this belief.

Relating Theory to Practice in Educational Research¹

Lee S. Shulman²

The histories of the social sciences have been characterized by crises of method. Though each generation is likely to view its own crisis as uniquely important, it is more accurate to identify the recurring dialogues on method and purpose of the social sciences (education included) as part of a continuing counterpoint to inquiry. Thus, while there is no doubt that the current debates in educational research are both compelling and important, researchers should not delude themselves into believing them to be innovative or capable of permanent resolution. Whether looking back to Dewey's (1896) critiques of the reflex arc, Sorokin's (1956) brilliant (and delightful) essays on the fads and foibles of sociology, or Miller, Galanter and Pribram's (1960) droll observation that psychologists must always choose between precision and relevance, a small number of themes recur predictably. The critical papers written in the past 10 years are contemporary restatements of that same small set. In Whitehead's memorable phrase, "Everything of importance has been said before by someone who did not discover it."

Purposes and Methods of Educational Research

In 1970 I published a paper, presumptuously titled "Reconstruction

¹An earlier version of this paper was published in Relating theory to practice in educational research: A report on an international conference held in Bielefeld, Germany, Institut für Didaktik der Mathematik der Universität Bielefeld, 1976.

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of Educational Research " (Shulman, 1970), which called for a renewed quest for functional laws in education employing research methods appropriate to the complexity of educational phenomena. That paper received the sound criticism of several colleagues: Gene Glass, who edited the journal in which it was published; Bob Gowin (1972), who recognized my failure to understand what constituted a peculiarly *educational* research question, as opposed to a behavioral science question in general (among other failures); and Kallos and Lundgren (1975), who observed the absence of any consideration of frame factors in my discussion of educational research.

Four years later, in "The Psychology of School Subjects," I set forth a somewhat different view (Shulman, 1974). Consonant with reconsiderations of the purposes and methods of educational research voiced by Glass (1972), McKeachie (1974), Cronbach (1975), and others, I concluded that the search for "laws" was a futile endeavor. I was not prepared to eschew the importance of middle-range theoretical formulations to inform the judgments of policy makers and practitioners, or of "basic" (non-evaluation) research to aid in the development of those formulations. But my earlier call for "multivariate experimental longitudinal research designs" as the panacea for the ills of educational research now appeared naive and ill-conceived. I have not the space here to reiterate the argument of that second paper, but I refer the reader to it for elaboration.

I now see the goals of educational research as: (1) to inform school people, practitioners, and policy makers about the current practice of education and its consequences, both intended and unintended; (2) to further illumine the understandings of these groups about the basic processes of learning, teaching, socialization, and the like, without deluding them into thinking that any of these processes occurs in a pure form in the classroom or school; (3) to develop a better understanding of

the clinical processes of judgment and action-selection which are at the heart of that *practical* activity called education, in order to develop better means for preparing educators and for preparing decision and instructional aids that support their activities; and (4) to develop and study those approaches to teacher preparation, as well as their associated technologies and decision aids.

Underlying these goals is a conception of educational endeavor as fundamentally practical, judgmental, and always changing, rather than lawful or capable of being rendered a precise technology. These are ideas in need of critical examination, elaboration, and review.

On Method

For as polymorphic an activity as that sketched above, a monolithic view of appropriate research method is clearly inadequate. Bridgman's dictum that scientific method is best defined as "doing one's damndest with one's mind, no holds barred" captures the basis for my belief that the methods of educational research must be drawn from a much broader range of options than those of classical experimental or correlational research.

The concept of method evolving at the Institute for Research on Teaching (IRT) combines many approaches to describing teaching and classroom life -- the "thick description" approach favored by anthropologists and ethnographers, the introspective self-reports of practitioners, the process-tracing strategies of cognitive psychologists, and others. At the Institute, we are impressed by Bronfenbrenner's (1976) call for an "experimental ecology of education" that combines the study of the multiple frames within which educational activities occur with the proviso that some intervention must take place before any characterization of the setting can be considered adequate. But these interventions may be more reminiscent of Piaget's "method clinique" than of Campbell

and Stanley's (1963) experimental and quasi-experimental designs. In addition, the product of this kind of research is as likely to be understanding of a particular case, as it is to be a "scientific generalization."

In Geertz's (1973) terms, we strive to generalize within cases as well as across cases. This creates the need for a process for drawing inferences from a set of thickly described cases that can be applied to new situations of educational interest. The means of achieving this task would range from formal procedures for accumulating evidence to deliberative procedures for rendering practical judgments.

The Social Context of Research

Rather than deal with the aforementioned problems theoretically, I would like to present in some detail the rationale and organization for the Intellectual Forum of the Institute for Research on Teaching and contrast it to existing organizational structures in educational research.

The Forum was created, in part, to address problems of interdisciplinary and inter-institutional mediation. This unit is seen as the adhesive which holds the Institute together, as the gyroscope which keeps Institute activities on course even as individual programs move swiftly in all directions, and as the locus for dialogue, debate, theory building and theory challenging, and dissemination and insemination of ideas vis-a-vis the research on teaching community and the broader worlds of practical wisdom and scientific theory.

Two patterns typically characterize existing educational research centers, both equally unappealing. The first is the "centrifugal institute" pattern, a configuration in which the participating scholars move further away from one another (and the ostensive "center") as their work progresses, maintaining the semblance of unity and collaboration only

during periodic site visits. The natural tendency for individual programs to enhance the quality and distinctiveness of their own efforts is nurtured by the character of this type of organization, and by the competition for recognition and resources between the units. If a program's payoff is contingent upon *its* productivity, there is little value to be gained from activities which encourage dialogue and collaboration and hence, muddy program distinctiveness. There are enough examples of such centers in the United States to document my observations. These centers, while ostensibly team efforts, are merely fiscal umbrellas facilitating utterly independent programming of research.

The second pattern is that of the "centripetal institute." Here, there exists a tightly controlled and integrated program, typically tied together by commitment to a single theoretical model or ideological commitment. While the anarchy of the centrifugal pattern is avoided in these centers, the cure may be as problematic as the illness. Must researchers on teaching be forced to choose between anarchy and dictatorship?

Both alternatives are equally unattractive. The centrifugal pattern, while laudable in that it promotes academic freedom and the survival value of diversity, merely replicates institutionally the typical cacophony of research activity in the field generally. Gains in unity and unity and integration are achieved in the "imploding alternative," but only through submission to a single theoretical or methodological commitment, an approach we find unacceptable in principle for research in education generally, and for research on teaching in particular.

Our Intellectual Forum is an attempt to cope with the problems of both these alternatives. We intend to nurture the diversity of concept and method which enriches inquiries into the nature and practice of teaching, while achieving integration, not around a single theory or model, but around commitment to a *deliberative process*. We have created

a unit dedicated to the enhancement of communication among members of the scholarly community -- a unit affecting both the means and the substance of the communications. Lawrence Cremin (1974), the eminent historian of education, captured the philosophy of this program in the remarks he made upon assuming the presidency of Teachers College, Columbia.

I would hope for the development of new ways to test, devise, exemplify, and teach educational practice . . . I would hope for systematic concern not only with the perfection of educational services but also with the delivery of educational services. We have at least one superlative model in the apparatus for agricultural education developed in the United States over the past hundred years. We need to study that model, learn what we can from it, and then develop an arrangement suitable to the needs of our profession . . . I hope we can suffuse it throughout with a spirit of inquiry, employing modes such as Joseph Schwab's "eclectic method," or what Robert Merton in his most recent writing has called "disciplined eclecticism" (to contrast it with "mere eclecticism"), or what Herbert Simon has called the "sciences of the artificial," by which he really means the sciences of practical design (p. 3).

We at the Institute agree with Cremin's prescription of Schwab's "eclectic method" or Merton's "disciplined eclecticism" as the preferred treatment. In the ensuing section, I shall describe in greater detail (1) the problems presented by social science and educational theory for research on teaching, (2) treatment for these problems at IRT; and (3) the organization and functioning of the Institute to develop and carry out that treatment.

Problems of Theory

Our thought at IRT has been influenced significantly by the work of Joseph Schwab. During the past 20 years, Schwab has analyzed the problem of theory for education in a series of insightful papers, beginning with his indictment of the "corruption of education by psychology" (Schwab, 1958) and continuing to his most recent contributions on "the practical" (Schwab, 1969; 1971; 1973; all three articles are reprinted in Schwab, 1978). He

discussed the limits of theory and social science theory in particular in the following expositions:

All theories, even the best of them in the simplest sciences, necessarily neglect some aspects and facets of the facts of the case. A theory covers and formulates the regularities among the things and events it subsumes. It abstracts a general or ideal case. It leaves behind the nonuniformities, the particularities, which characterize each concrete instance of the facts subsumed. Moreover, in the process of idealization, theoretical enquiry may often leave out of consideration conspicuous facets of all cases because its substantive principles of enquiry or its methods cannot handle them. ... And what is true of the best of theories in the simplest sciences is true a fortiori in the social sciences. Their subject matters are apparently so much more variable, and clearly so much more complex, that their theories encompass much less of their subjects than do the theories of the physical and biological sciences (Schwab, 1969, p. 11).

Nearly all theories in all the behavioral sciences are marked by the coexistence of competing theories. ... All the social and behavioral sciences are marked by "schools," each distinguished by a different choice of principle of enquiry, each of which selects from the intimidating complexities of the subject matter the small fraction of the whole with which it can deal (Schwab, 1969, p. 13).

Schwab proceeds to show that these theories, while individually incomplete, complement one another since each "take(s) hold of different aspects of the subject of inquiry and treat(s) it in a different way." Moreover, he argues that the attempt to develop a single, more comprehensive theory would also fall short. Any single theory, with its consistent set principles, will be restricted in its applications.

It will remain the case, then, that a diversity of theories may tell us more than a single one, even though the "factual" scope of the many and the one are the same.

It follows then, that such theories are not, and will not be adequate by themselves to tell us what to do with human beings or how to do it. What they variously suggest and the contrary guidances they afford to choice and action must be mediated and combined by eclectic arts and must be massively supplemented, as well as mediated, by knowledge of some other kind derived from another source (Schwab, 1969, pp. 13-14).

When, in that last paragraph, Schwab speaks of the need to supplement and mediate theoretical knowledge -- even after its eclectic transformation -- by knowledge of another kind, he is referring, at least in part, we believe, to the knowledge of practitioners. *The need to combine eclectically the fruits of theory with the wisdom of practice forms the foundation of the Intellectual Forum* (something which should be kept in mind when I outline the structure of the Forum later in this paper). This need was well expressed by McKeachie (1974) in his treatment of "The Decline and Fall of the Laws of Learning."

Fortunately most educational situations are interactive situations in which a developing, learning human being engages with a situation in ways designed to meet his learning needs. Part of that situation is another human being who has some resources for instruction and some capacity to adapt to the learner (p. 11).

A Forum for Eclectic

Having diagnosed the problems of theory as constitutional and hence, unavoidable (its major virtues -- abstractness, generality, etc. -- accounting also for its intrinsic liabilities), Schwab proceeds to outline an agenda for dealing with these problems, an agenda calling for the development and deployment of those arts of eclectic "which treat pluralities of theory about a single subject."

The problems Schwab describes can be found within the educational research community, *writ large*, as well as within any particular institution. The solution we proposed focused the clarifying light of the eclectic on problems at both levels. I conclude this brief argument for the therapeutic value of eclectics with the following observation by Schwab (1969):

Let it suffice for the moment that witness of the high effectiveness of eclectic methods and of their accessibility is borne by at least one field familiar to us all -- Western medicine. It has been enormously effective, and the growth of its competence dates from its disavowal of a single doctrine and its turn to eclecticism (p. 10).

Recapitulation and Transition

Earlier in this paper I described two equally unappealing alternatives for research on teaching, the dis-integrated centrifugal model and the over-integrated centripetal pattern. Next, I reviewed the consequences of those alternatives in terms of the intrinsic inadequacies of single theories, and by implication of, multiple theories which are not systematically and coordinately brought to bear on educational problems of either theory or practice. (It is as if the field were fixated at a stage of preoperational thought, capable of perceiving problems from a single perspective, but unable to coordinate perspectives at some higher level.) Finally, I made reference to the usefulness of the eclectic arts, as conceived by Schwab, in the remediation of these difficulties.

I shall now turn to a description of the structure of the Intellectual Forum, the functions of each of its programs, and the relations among them.

Intellectual Forum Programs

Level I: The Intra-Institute Deliberation Program

We at the Institute for Research on Teaching developed an Intellectual Forum divided into three interlocking programs or levels. Level 1, the Intra-Institute Deliberation Program, constitutes the regular deliberative body of the Institute. The sole function of the program is to interrelate substantively Institute activities, not as an

administrative or fiscal task, but as an ongoing conceptual challenge.

Professor Schwab agreed to assist in these activities. He conducted seminars and workshops for Institute staff members to help them develop skill in the eclectic arts. We believe the involvement of Schwab in the activities greatly helped the Institute incorporate the multiple perspectives afforded by multi-disciplinary teamwork.

More important than merely desegregating the disciplines by placing them in adjoining offices (too often a form of parallel play), we are committed to exploring approaches to the active, eclectic integration of disciplines in the investigation of teaching. One of the vehicles for achieving this end was a seminar in Disciplinary Transaction, conducted during the Institute's first year by Professor Schwab and including some 25 Institute faculty from several disciplines and professional roles. Among these participants were elementary school teachers, teacher educators, and researchers from many disciplines -- economics, psychiatry, linguistics, science (physics), clinical psychology, developmental psychology, anthropology, philosophy, cognitive psychology, statistics, mathematics, and others. Through readings and discussions, these participants attempted to understand each others' *terms*, the perspectives through which each defines the world, separating the problematic from the trivial and the figure from the ground.

To prevent any one discipline from dominating the deliberations, Schwab selected readings which fell outside the professional expertise of the participants -- the first chapter of Genesis, Faulkner's short story "A Rose for Emily," a treatise on blood circulation by William Harvey, and so on. We noticed changes in the way in which individuals listened to each other; they exhibited greater interest in searching for the others'

terms and in attempting to appreciate and employ them. But this was a difficult task and one whose resolution cannot be judged in the immediate future.

Level I of the Forum is currently embodied in the activities of the Basic Processes group. This group's permanent membership is composed of a psychologist, a philosopher, an anthropologist, and a teacher educator, each drawn from different programs of the IRT. They meet weekly to discuss questions that cut across the boundaries between programs, with special attention devoted to problems of theory, method, and applications to teacher education. During the year, meetings are organized by this group to call attention to such problems, and to enlist the thinking of IRT staff and outside consultants in the consideration of these issues.

For example, after noting that "teachers' conceptions" was a construct employed in different ways across many IRT research programs, a two-day seminar was organized to draw together the disparate "conceptions of a conception" employed and to subject them to critical comparison and contrast. Senior researchers and interns prepared brief position papers to initiate discussions, and two outside consultants participated in the deliberations.

A second example can be found in the group's discussions of the applications of IRT research on teaching to the understanding and improvement of teacher education. Special attention was devoted to considering how different research methods might produce research with contrasting implications for the preparation of teachers. Members of the Basic Processes group prepared formal papers for presentation to weekly IRT colloquia on this topic, followed by a two-day conference attended by IRT staff and several outside participants. Here again, the intention was to foster broad, cross-program communication and deliberation within the

Institute.

The challenge of promoting intra-institute deliberation becomes more serious and demanding as the individual research programs become more mature. The Basic Processes group is attempting to develop new means for combatting the tendency for programs to become insulated. Like weight control, it is a battle that must be waged ceaselessly or it will be lost.

It is worth noting that most research programs at the Institute have staffs comprised of researchers from several disciplines, teacher educators, and teachers, thus themselves constituting microcosms of the Forum.

After three years of effort we remain convinced that this juxtaposition of disciplines and roles contributes to unusually fruitful educational research. We find problems addressed in the terms of those who experience them, rather than exclusively in terms of a dominant discipline. In the context of the Intellectual Forum, we have begun to address the challenge of developing *theories of practice*. Such theoretical work is necessary to accomplish the improvement of education by means of research and deliberation.

Level II: The Invisible College

Level II of the Intellectual Forum has been dubbed the "Invisible College." Sociologists of science have long used the term "invisible college" to designate a community of geographically dispersed scholars working on the same or adjoining problems who maintain a system of communication and/or collaboration via informal channels. It is not unusual for two members of an invisible college who live 3,000 miles apart to have better communication with each other than with a "visible college" colleague just down the hall.

The purpose of the Invisible College program is to promote the

development of an actively communicating community of scholars in the research on teaching field. Just as researchers with disparate perspectives, research interests and styles, and disciplinary roots are brought into more effective communication via the Level I Intra-Institute deliberations, researchers with similar perspectives and interests are brought closer together at the Invisible College level.

The IRT has already organized several three-day meetings of this group whose members are drawn from institutions (universities, school districts, research centers) with diverse priorities and research orientations. The discussions were exhilarating, exhausting, and frustrating, yet promising. They will continue, and will be supplemented by continuous communication via newsletters, conferences, and the like. Moreover, an Invisible College Notebook summarizing all research in progress by members is now issued to all members of the College. It is revised semi-annually.

Level III: Interaction Between Education and Other Disciplines

Level III of the Forum serves as the interface between the worlds of educational practice, on the one hand, and the related bio-social and behavioral science disciplines, on the other, with the focus on research on teaching. The involvement, via panels, consultantships, and conferences, of leaders in the adjoining disciplines has at least two purposes: (1) to bring to light concepts and methods employed in other domains which might be useful for analysis or problem-finding in research on teaching; and (2) to entice leading scholars in other fields to study the problems of teaching, thus increasing the available research resources for our field.

In addition to providing for input from teacher collaborators in all units of the Institute, and for their participation on the Directorate and

various advisory boards, Level III is another avenue of communication for representatives of the teaching profession and researchers who study teaching.

Summary and Conclusion

The Intellectual Forum coordinates the deliberations of the different groups within the Institute, sustaining a dialectic among the theoretical, methodological, and practical views which they represent. The Forum is based on the notion that the fruits of interdisciplinary labors do not come merely from bringing scholars of different orientations together and waiting for the inevitable eclectic magic to shower its sparks. As I observed earlier, most ostensive interdisciplinary efforts are, in fact, intellectual versions of parallel play, characterized more by miscommunication, or no communication at all, than by true dialogue and effective deliberation.

A major function of the Forum is to encourage the development of what Merton (1967) has dubbed "middle-range theory" for organizing the many findings that emerge from empirical work in the field and for providing a set of conceptual frameworks for finding new problems, generating new questions, and making new sense out of old data. We at the IRT believe that the methods of disciplined eclectic are the appropriate tools for developing middle-range theories, or for solving practical problems of training or dissemination. Hence, we have committed ourselves to the use of those methods as the heart of the work at all three levels of the Forum.

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