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ABSTRACT

Educational research has thus far failed to greatly improve education because it is based on a model of reality that emphasizes unilateral control in both research and practice. Efforts to gain unilateral control presume that researchers or practitioners know what is significant from the outset, that they are essentially outside the situation they are observing or acting on, and that knowledge is to be used to implement a preconceived plan of action. Scientific research based on the unilateral control model seeks only to develop descriptive theories; when faced with the task of proposing alternatives to what it describes, such research fails because it does not reflect on its own assumptions. In contrast to the unilateral control model, which offers only a fundamentally anti-educational "reflective" science "about" action, a new model is needed on how to conduct an "action science." Such a science would consider the researcher to be an interactive participant, rather than a detached observer, in the situation under consideration and would welcome the possibility of change through dialog between the actor-researcher and others. Research, according to this new model of collaborative inquiry in the social sciences, would be regarded as an "experiment-in-practice," an opportunity for studying the self as well as others that would require a new politics and a new ethics. (JBM)

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CHAPTER ELEVEN

Why educational research has been so uneducational: the case for a new model of social science based on collaborative inquiry

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Why has educational research been so uneducational? Why hasn't past educational research taught us better educational practice?

Why, for example, did the original Coleman survey research on schooling present us mainly with negative findings — namely, that none of the measured differences among schools could account for differences in student performance? Why could Coleman find no evidence from his research about how to influence the main variable that did seem to make a significant difference in students' achievement — namely, a sense of control over their own destiny? (Coleman *et al.*, 1966).

Why, later, did Jencks' research on schooling again present us mainly with negative findings — namely, that differences in schooling were *not* associated with differences in later incomes? Why did Jencks' research offer neither theory nor data on the question of whether schooling *ought* to make a difference in later income or on the question of how educators could better achieve the aims of schooling? (Jencks *et al.*, 1972).

Why did Cohen and March's research on universities, find that the 42 they studied (including many of the most eminent) could best be characterized as 'organized anarchies' with no coherent sense of mission or decision-making process? Why were their main findings about educational leadership that the presidents of these universities could not control their own time sufficiently to take the time to address the question of what the purpose of the university is? (Cohens and March, 1974).

Do these various kinds of negative findings indicate that anything deserving to be called 'good educational practice' is at best so rare in this country as to be unnoticeable in comprehensive empirical studies? Or do all these negative findings indicate that educational research as presently practised provides us with no access to the sort of theory and data that could identify and lead us towards 'good educational practice?'

This chapter answers 'Yes' to both these last questions, and the reason is the same in both cases. The reason why neither current practice nor current research helps us to identify and move towards good educational practice is that both are based on a model of reality that emphasizes unilateral control for gaining information from, or having effects on, others. Research in businesses, government, and educational institutions shows that administrators in all fields choose, without question, behavioural strategies which seek to maximize their unilateral control over situations (Argyris 1969, 1971, 1974). Indeed, even persons who disavow unilateral control as unpalatable usually assert unilateral control in their very disavowals (Argyris, 1968b). At the same time, the current ideal of rigorous experimental research (Campbell and Stanley, 1966) directly advocates the tightest possible unilateral control by the researcher over the research setting. Moreover, like political and religious regimes of the past, the institution of science makes assumptions about the nature of reality which it does not test in any systematic way (Husserl, 1965; Kuhn, 1962).

Both in research and in organizational practice the effort at unilateral control presumes that the initial actor (whether researcher or practitioner) knows what is significant from the outset and that this knowledge is to be put to the service of controlling the situation outside the actor, in order to implement the pre-defined design as efficiently as possible. If students, subordinates, or research subjects seek to question whether there isn't something more significant at stake in the first place, the initial actor tends to redouble the effort to control the situation unilaterally. If s/he fails to do so, s/he tends to regard the effort as a failure and the situation as 'out of control'.

The reader will already have begun to appreciate that the model of unilateral control is intrinsically anti-educational and cannot, therefore, lead to good educational practice. If everyone in a given situation acts in accord with this model, then no-one is open to learning new strategies or to examining their own assumptions. Moreover, to the extent that the different actors' substantive assumptions and strategies differ at the outset, then they won't even succeed in 'teaching' one another the 'facts' of the situation, since the relevant facts will differ according to the particular assumptions and strategies of particular actors.

This fundamentally anti-educational quality of the model of unilateral control may largely escape notice so long as the participants in situations share a culture (share substantive assumptions). But in a nation of many cultures,

such as the United States, in a world where different cultures must learn to live together as one planet, at a time when different cultural groups are increasingly refusing to subordinate their values, and at a time when change is occurring so fast that each new generation of schoolchildren and college students (i.e. every four years or so) represents virtually a new culture, the model of unilateral control simply doesn't work. Literacy decreases and violence increases.

On a personal scale, the anti-educational quality of the model of unilateral control reveals itself in another way. Most practitioners today, no matter how imposing their formal titles, would agree that they act under conditions that are almost exactly the reverse of pre-defined, unilaterally controlled (and hence uninterrupted) experimental conditions. Consequently, the conditions under which knowledge is gained when following the canons of rigorous experimental research are simply not generalizable to the conditions practitioners face. Practitioners are generally attempting to act well in situations which they do not fundamentally comprehend, in pursuit of purposes which are not initially fully explicit and to which their commitment is initially ambivalent, *and* they are being interrupted all the while by other claims on their attention. Of course, it is not altogether pleasant and reassuring to acknowledge the degree of uncertainty and discontinuity to which the foregoing sentence points, so practitioners, along with researchers, generally still strive to maintain the fiction that unilateral control is the only realistic way to get things done or to discover truth. But what practitioners really require is a kind of knowledge that they can apply to *their own behaviour* in the midst of ongoing events, in order to help them *inquire* more effectively with others about their common purposes, about how to produce outcomes congruent with such purposes, and about how to respond justly to interruptions.

Scientific research based on the model of unilateral control seeks to develop descriptive theories about facts external to the researchers. Such descriptive, disembodied knowledge cannot, in principle, help acting systems learn how to act better next time. This assertion can be exemplified by returning to the survey studies of education mentioned at the outset of this essay, all three of which offered significant findings about what education currently does *not* do. Had the findings been different, the studies might have described what education *does* do. But, in either event, the findings hold no logical implications or empirical clues about: (1) what education *ought* to do, (2) *how* education might do what it ought to do, or (3) *which of their aims, strategies, or behaviours educational practitioners would need to reform* in order to educate more successfully. Moreover, none of these studies provides an educational process whereby the practitioners studied might come to question their effectiveness and seek knowledge relevant to more successful education. These omissions are not peculiar to these particular studies, but rather are characteristic of all research based on the model of unilateral control.

Despite the fact that descriptive theory cannot help acting systems learn how to act better next time — no matter how defensible it may be in analytical and statistical terms — researchers such as Coleman, Jencks, and Cohen and March usually make various suggestions about what future actions their findings imply. For example, in *Inequality* Jencks suggests how to solve various educational questions throughout the book and at the end suggests that a direct redistribution of income would be a better way than increased educational opportunity to raise the income of poor persons. Such suggestions are utterly subjective and in no way substantiated by the data, given the quality of the overall structure of such studies. Although Jencks has since been able to respond quite convincingly to technical criticisms of his analytic designs and statistical practices, he has also acknowledged, in a final phrase, that his rhetoric overreaches his findings:

> The aim of the book was to show that one specific, widely-held theory about the relationship between school reform and social reform was wrong.... The evidence in *Inequality* cannot carry us much further, even though its rhetoric sometimes tries (p. 164).

That Jencks and other social scientists should yield to the temptation to suggests courses of action based on their analyses is not so surprising, for who is not at some level interested in the implications of social knowledge for more effective and more just social action? The dilemma is that what our current model of social science regards as valid social knowledge lacks the qualities necessary to help us increase the effectiveness and justice of our actions.

The model of unilateral control is not only impractical and anti-educational. It is also fundamentally unscientific. In the first place, current experimental and survey procedure may be open to dialogue and disconfirmation in theory (Bronowski, 1963; Horton, 1967), but it is not experimental and open to disconfirmation in practice. The researcher tries to learn reflectively before and after an experiment (or survey), but not actively while s/he is doing the 'study'. In the second place, even the most rigorously controlled experimental (or survey) research does not study, nor does it succeed in eliminating, influences by the researcher on the subjects (Bakan, 1967; Friedman, 1967; Rosenthal, 1966; Perry, 1966). In the third place, the unilaterally controlled research context is itself only one particular kind of social context and a politically authoritarian context at that. It should not be surprising that some of its most spectacularly well-conceived findings concern persons' responses to authoritarianism (Milgram, 1974).

To summarize these criticisms in a still more general way, one can say that the currently regnant model of social science altogether neglects to study what is actually going on, i.e. one's own action with others and the assumptions upon which that action is based. The entire attention of the unilateral control

model is focused away from the actor (researcher) towards the outside world, where it is assumed, following Locke, that there are simple facts to be observed. By contrast, philosophers since Kant have helped us to see (or have they?) that we bring an implicit social-linguistic perspective (such as the Lockean perspective) to any explicit observation (Churchman, 1972; Habermas, 1971; Husserl, 1962 and 1965; Langer, 1967; Mannheim, 1936; Merleau-Ponty, 1963; Polanyi, 1958; Wittgenstein, 1953). Since the perspective influences and frames what is attended to in the first place, the results of observation cannot in any simple way criticize the original perspective, especially when, as in the case of the Lockean or unilateral control models, the perspective does not invite criticism of its assumptions.

Since the model of unilateral control upon which social science is currently based is fundamentally anti-educational, it should not surprise us to find the wide consensus today that educational research represents the doldrums of the social sciences. But whereas this evaluation of educational research commonly leads to pleas for better educational research in the current model of rigorous research, this chapter argues that a new model of social science is necessary to give us access to educational issues.

The Model of Collaborative Inquiry

By way of contrast to the model of unilateral control, the new model of social science and social organizing presented in the remainder of this chapter can be named the model of collaborative inquiry. Some features of the model of collaborative inquiry have probably already suggested themselves by implication to the reader in the course of the foregoing critique.

The model of collaborative inquiry begins from the assumption that research and action, even though analytically distinguishable, are inextricably intertwined in practice. Knowledge is always gained through action and for action (MacMurray, 1957; Polanyi, 1958). From this starting-point, to question the validity of social knowledge is to question, not how to develop a *reflective* science *about* action, but how to develop genuinely well-informed action — how to conduct an *action science*. The researcher recognizes that s/he is simultaneously practitioner in conducting research, and the practitioner recognizes that s/he is simultaneously researcher in seeking what is really going on and whether s/he is really achieving the aims at hand. All social actors, whether individuals or organizations, whether called 'students', 'teachers', 'researchers', 'administrators', 'schools', or 'businesses', engage in continuous, more-or-less flawed inquiry-in-action aimed at functioning increasingly effectively.

In order to act more effectively, the individual or organization requires valid knowledge, and not just valid knowledge about the outside world, but valid

knowledge about the acting system's own purposes and valid knowledge about the quality of interplay between actor and outside world as well. Moreover, in order to act more effectively, the individual or organization requires not just empirical and theoretical knowledge, but knowledge that directly affects purposes and practices as well. On the individual scale, we would call these two additional kinds of knowledge intuitive and sensual knowledge, intuitive knowledge about what is worthy of attention in the first place and about how to direct attention, and sensual knowledge of posture and gesture at any given moment and about how to move differently.

In general, the acting system is not interested abstractly in the frequencies of relationships between external variables so much as in the experienced interaction between consciousness and external events. Obviously, this process is only observable to a participant in it. But, on the other hand, not all participants will necessarily observe this process. For to observe this interaction, the acting system must cultivate an attention 'span' which embraces the translations back and forth among intuitive purposes, theoretical strategies, behavioural methodologies, and external effects, rather than being captured by any one of those qualities at a given time. Without such attention the person or organization cannot begin to distinguish between assumptions and observations — cannot begin to learn from experience. The author's own work (Torbert, 1972, 1976a) and that of Argyris and Schon (1974) suggest that persons and organizations in contemporary society almost never develop the quality of attention necessary to test whether their purposes, strategies, and actual behaviours are congruent with one another. Thus, for all the vaunted 'rationality' of modern bureaucratic organizing and of 'economic' man, it should not surprise us that we experience the twentieth-century pre-eminently as an era of grotesque incongruities between espoused strategies and actual effects. In the current model of social science, there is no recognition whatsoever of the primacy of an interpenetrating attention for the development of valid social knowledge.

Just as the current model of social science gives no place to the development of interpenetrating attention, so also it gives no place to the development of sensual awareness and supple behaviour. Instead, the contemporary model of social science concentrates exclusively on the structural and external qualities of experience (theoretical propositions and empirical data). But an acting system requires sensual (or operational) awareness and suppleness if it is to succeed in effectively enacting new knowledge rather than in behaving either habitually or awkwardly. Without sensual or operational awareness and suppleness, new social theories cannot really be tested in action because persons will continue to behave habitually no matter what their rhetorical commitments. And indeed, a growing body of literature shows that organizational and curricular innovations in education often result in 'no differences' on outcome measures because the innovations were not really

implemented in the first place (Argyris, 1965; Gross *et al.*, 1971; Lukas, 1973; Rivlin and Timpane, 1975).

Because no acting system begins with the sort of embracing, interpenetrating attention advocated here, each actor requires others' best attention and sincere responses in order to learn whether his or her own purposes, theories, actions, and effects are mutually congruent. In other words, the aspiring action scientist requires others' friendly collaboration. A second reason why *collaborative* inquiry is necessary for effective action is that the 'topology' of social situations is determined by the qualities of each actor's intuitive, theoretical, sensual, and empirical knowledge and being. Consequently, each actor can gain increasingly valid knowledge of social situations only as other actors collaborate in inquiry, disclosing their being, testing their knowledge, discovering shared purposes, and producing preferred outcomes. As the actor-researcher increasingly appreciates these motives for collaborative inquiry, s/he increasingly wishes to approach situations in everyday life as real-time, mutual learning experiments — as experiments-in-practice.

Of course it may well be that other participants in the social situation do not share this model of collaborative inquiry and are hostile to 'experiments-in-practice'. Indeed, they may interpret the actor-researcher's initiatives as just another effort at unilateral control. This interpretation may be due either to the fact that the others can imagine no other kind of initiative, or to the fact that the actor-researcher's behaviour is actually incongruent with the model of collaborative inquiry. If the actor-researcher possesses sufficient virtuosity in the practice of collaborative inquiry, s/he can inquire into the initially hostile response. Any other move — e.g. to defend collaborative inquiry in principle (thereby attempting in most cases to assert unilateral control in practice), or to yield to another's assertion of unilateral control — betrays the model of collaborative inquiry. These various possibilities show that the structure of an experiment-in-practice cannot be fully pre-defined and stable, but rather evolves over time.

The foregoing outline of the early assumptions of collaborative inquiry already allows us to list a series of distinctions between the kind of knowledge it seeks and the kind of knowledge sought under the current paradigm of social science. In experiments-in-practice:

(1) The researcher's activities are included within the field of observation and measurement, along with the study of other subjects.
(2) The structure and variables to be studied are not merely pre-defined, but rather may change through dialogue between the initiating actor-researcher and others.
(3) Interruptions are not simply viewed as irrelevant inconveniences, to be avoided or suppressed so far as possible, but rather are treated as positive shocks, symbolizing all that is not included within the researcher's

attention at the moment of interruption, inviting a more encompassing awareness of what is at stake. (Whether or not the researcher chooses a new focus of attention when interrupted is a distinct question.)

(4) Conflict between different paradigms or models of reality is anticipated, welcomed as an opportunity to test the validity of assumptions, and explicated so far as possible. Such conflict will not only be intellectual, but rather will usually have immediate emotional and practical implications as well. Thus, the aspiring action scientist is challenged from the outset to seek and offer information that is aesthetically appropriate and politically timely as well as analytically valid.

(5) The ultimate criterion of whether a given action is aesthetically appropriate, politically timely, and analytically valid is whether it yields increasingly valid data about issues increasingly significant to the effectiveness (including, of course, the issue of what constitutes effectiveness for any given acting-system; cf. Steers, 1975; Torbert, 1977, Weick, 1976) of the participating acting systems and does so in such a way as to encourage a more encompassing, interpenetrating attention by these acting systems.

(6) The interest is as much in knowledge uniquely relevant to the particular time and place of the experiment as in knowledge that is generalizable, in so far as the interest is not focused primarily on generalizing to persons and organizations outside the experiment, but rather on generalizing to the rest of the lives of the participants in the experiment. Further, the interest in generalization is not merely cognitive, but rather in ideas that vivify one's own and others' intuitive, emotional, and sensual experience — that is, in ideas that open beyond themselves to an interpenetrating attention.

(7) The primary medium of research is an attention capable of interpenetrating, of vivifying, and of apprehending simultaneously its own ongoing dynamics and the ongoing theorizing, sensing, and external event-ualizing (Torbert, 1972). Only such an attention encompasses purposes, strategies, actions, and effects. Thus, only such an attention makes it possible to judge whether effects are congruent with purposes — i.e. whether an acting system is effective. Put another way, the requisite attention interpenetrates six dimensions of human activity, three 'spatial' and three 'temporal' dimensions — gravity, levity, extension, duration (timeboundness), eternity (timelessness), and intention (timeliness). Only such an attention makes it possible to judge whether extensions are congruent with intentions — i.e. whether an acting system is effective.

(8) The secondary medium of research is symbolic, ironic, diabolic thinking and feeling capable of vivifying and apprehending the significant issues at stake, the value-assumptions in actors' behaviour, the degree of congruity or incongruity between purposes and effects, and the efficient paths for common effort (Torbert, 1976b, 1978).

(9) The tertiary medium of research is action — movements, tones, words, and silences — sufficiently supple, attuned, and crafty to create scenes of questionable taste, to demonstrate the good taste of collaborative questioning, and to listen silently to responses. Such disciplined research action does not screen out strangeness and disconfirmation, but rather invites tests of its own and others' sincerity and effectiveness.

(10) The quaternary medium of research is the collection, analysis, and feedback of empirical data. The interest in empirical data is not concentrated on predicting relationships between independent and dependent variables; rather, the same study will seek empirical data relating to acting systems' aims, strategies, behaviours, and effects, in order to test, and offer feedback on, the degree of congruence or incongruence across these qualities of experience.

(11) The fundamental (though of course not the only) type of empirical instrument is a record of experience more complete than the specific measures used, for such a record represents the closest empirical analogue to an embracing attention. Such records (e.g. tape-recordings of meetings, field notes, personal journals) allow participants or other interested persons to find *post hoc* clues about what else besides the defined variables and the pre-supposed explanations was going on in a given situation. Such records can also yield codable process data that can help determine whether the organizational design of the experiment was in fact open to challenge and reformation and whether such dialogue was conducive to increasingly appropriate design decisions.

(12) The relationship between the initiating actor-researcher and any other person or organization invited to engage in collaborative inquiry will tend to develop, unless terminated, through three stages of increasing investment and subtlety of focus. In the first stage, no matter how well developed the researcher's initial theory of the situation may be, and no matter how internally reliable and valid his or her empirical data-gathering instruments may be, the primary question is whether the initiating actor-researcher and the system(s) engaged will develop a shared model of reality in which continued collaborative inquiry makes sense. Only if the participating parties come to share the aim of collaborative inquiry and the model of interactive qualities of experience will interest during a second stage shift to investigating gross incongruities among these qualities of experience. In this stage, the participating systems are actively collecting and analysing experiential-empirical data, but they will focus more on the general direction of the findings than on the precise outcomes. Only if and as the participating systems come to share the aim of collaborative inquiry and the strategy of investigating and properly digesting major incongruities may they, during a third stage, focus on obtaining precise, high-quality results in terms of aesthetic appropriateness, political timeliness, and analytic validity.

Research, as understood in the model of collaborative inquiry, is an actual experiential process occurring in a more or less distorted and incomplete fashion at any given moment. Empirical research instruments and written reports for third parties may aid the actual research process or may impede it. How a person or an organization develops a more valid experiential-empirical research process is virtually unexplored at the present time in Western science. What have heretofore usually been thought of as 'mystical' disciplines apply to the personal development of a more illuminating attention (Krishnamurti, 1969; Ouspensky, 1949; Raymond, 1971; Torbert, 1972; Trungpa, 1969, 1974). The field of organization development begins to suggest the issues in helping organizations to engage in experiential research (Argyris, 1962, 1971; French and Bell, 1973; Schein, 1969; Torbert, 1975, 1976a).

Table 11.1

		SCIENTIST	
		No self-study	Self-study in action
SUBJECTS	No self-study	Present-day, unilaterally controlled, empirical social science	Educational conflict between world-views of scientists and subjects (Argyris, 1971)
	Self-study in action	Subjects would not generally submit to study. However, Castaneda (1968, 1971, 1972) is an example	Collaborative experiential-empirical inquiry (Torbert 1976a)

According to this new model of inquiry, an acting system that does not engage in experiential self-study can neither produce nor collect valid data because of the unexamined incongruities within its experience. Such a system will both deliberately and unintentionally distort data and will resist processing feedback which identifies incongruities. A primary index of the capacity of a social system to produce valid data becomes the degree to which confrontation and exploration of possible incongruities is initiated and welcomed. Whereas at present social scientists neither engage in self-study as a part of their scientific work, nor seek to encourage self-study in those whom they study, such experiential self-study (using empirical measuring instruments where appropriate) constitutes the core of social science in the new model. The difference in quality between social science at present and as practised under the model introduced here can be simply summarized as in Table 11.1. As the table indicates, the new model of social research refocuses the fundamental concern to attain valid knowledge from unilateral efforts by the researcher aimed at preventing various kinds of 'contamination' of his preconceived empirical data (cf. Campbell and Stanley, 1966) to collaborative efforts

between the researcher and the personal or social system in question, aimed at encouraging kinds of attention, conversation, and data collection which reveal and test information and theories of ever-increasing significance to that system (Argyris, 1974, 1976). In short, valid social knowledge becomes possible only as fundamental changes occur in people's commitment to personal learning and in their ways of organizing socially. The practice of genuinely educational research would transform the social world in the course of studying it.

Under the new model of scientific research, valid social knowledge depends first and foremost on the development among persons of a new politics based on a shared wish to research their everyday lives together. Valid social knowledge depends secondarily on the development among persons of a new ethics based on the commitment to confront apparent incongruities in their common life. Valid social knowledge depends only tertiarily (but, of course, by no means unimportantly) on the development among persons of technical skills in discriminating the degree of trustworthiness of experiential-empirical data.

Conclusion

Obviously, a short chapter purporting to introduce a new paradigm for the social sciences raises far more questions than it can answer. A longer chapter would examine current studies that partially illustrate the paradigm of collaborative inquiry (see Chapter 29) would speculate about the changes necessary in graduate programmes in the social sciences if they are to become experiments-in-practice which encourage collaborative inquiry (see Chapters 36 and 37); would describe disciplines useful to developing a trans-conceptual, interpenetrating attention; and would dwell in much greater detail on methods of assessing validity in the context of the new paradigm (see Chapter 21).

The present chapter has sought merely to sketch the axiomatic structure of collaborative inquiry and to argue its intuitive plausibility as a means and as an end for educational research and educational practice.

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