1998

The Organizational Action Research Model

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Recommended Citation

Elfenbein, M., Brown, S. M., & Knight, K. H. (1998). The organizational action research model. In Brown, S. M. & Seidner, C. J. (Eds.), *Evaluating corporate training: Models and issues* (pp. 3-17). Boston: Kluwer Academic.

10 THE ORGANIZATIONAL ACTION RESEARCH MODEL

Morton Elfenbein, Stephen M. Brown and Kim H. Knight

It is a cliché to say that we are in an era of unprecedented continual change. But, change is the hallmark of our times. Some writers have called this a period of transition in which we are moving toward a new social order. Every institution in our society has, and is still, undergoing radical change, and those that have not been able to change fast enough to meet the challenges presented by the new age have been met with widespread criticism. Along with the change in our institutions, there are two parallel and concurrent changes. These are changes in the skills and abilities needed by the practitioners who manage organizations and hence a concurrent change in the training of those who are to manage. It is this latter issue that is the major focus of this chapter. We will begin by examining the parameters of the failure of the current mental model from the perspectives of a number of current authors. This will be followed by an examination of the work of David Kolb, who has given considerable thought to the ways adults in general and managers in particular, think and build knowledge. This will be followed by the Organizational Action Research Model (OARM) of organizational action research that we propose as a solution to the failure of the current model. It provides practitioners with a different knowledge-building perspective, and a way of reflecting and evaluating their practice.

This chapter proposes a paradigm, which empowers practitioners to practice research to meet their needs and to advance the profession to which they belong. It proposes the integration of practitioner and researcher role as an

alternative to the fragmented model that currently exists. In doing so, it draws much from the past tradition of the action researchers as well as the action science approach espoused by Argyris, Putnam & Smith (1985) and also the work of Schon (1983). In this way, the needs of individual managers to evaluate their espoused theories and their theories-in-use can be undertaken so that their organizations can function more realistically and can respond more effectively to the need for self-examination and change.

The Current Model

Many of the ideas concerning the problems associated with training of professionals have been addressed before. Donald Schon has directed considerable criticism at professional training in general. Professionals as a whole, he believes, are a product of a paradigm that may not be moving with the times and certainly not within the context of practice. The traditional view of a professional discipline is, as Schon (1983) stated, based on technical rationality. In this view, new knowledge is generated through scientific research in the basic sciences or underlying disciplines. Then there is an applied science, which addresses diagnostic and problem-solving techniques. Applied science rests on the foundation of basic science. Application is found in practice. The three components are given in hierarchical order of status, with practice having the lowest status. Most professional disciplines have attempted to gain the status of the higher professions by emulating the medical model. In this model knowledge is generated through the scientific method and applied to problems that the professional addresses. This model relegates practice to the implementation of scientific principles and the lowest of status. The highest status and generator of research is found in the basic disciplines, such as biology and psychology, whose investigations are single disciplines in focus. These disciplines tend to have a preference for experimental designs that tend to reduce problems to single variables, which can be researched through experimental designs. These disciplines do not address the all-happening-at-once interdisciplinary nature of problems found in professional practice. The researchers in this older paradigm tend to be isolated and removed from practice. They often do not understand the problems encountered in practice or are unaware of the ramifications of implementing their solutions. This paradigm has resulted in the researcher having authority in the accumulation of knowledge, and has perpetuated a top-down view of knowledge. The researchers claim to be value-free and neutral in their investigations. They

strive for detachment and objectivity. However, this is contrary to the practitioner's need for good solutions and their passionate commitment to their professions and the mission of their organizations. Schon summarized his work:

> I argued for a new epistemology of practice, one that would stand the questions of professional knowledge on its head by taking as its point of departure the competence and artistry already embedded in skillful practice—especially, the reflection-in-action (the thinking what they are doing while they are doing it) that practitioners sometimes bring to situations of uncertainty, uniqueness and conflict. In contrast, I claimed, the professional school of contemporary research universities give privileged status to systematic, preferably scientific, knowledge. Technical rationality, the schools' prevailing epistemology of practice, treats professional competence as the application of privileged knowledge to instrumental problems of practice. The school's normative curriculum and separation of research from practice leave no room for reflection-in-action, and thereby create—for educators, practitioners and students—a dilemma of rigor or relevance (Schon, 1987, p. xi).

Professional Training

In a time when there is a growing demand for professional services and increasing expectation for results from professional problem-solving, there is also a crisis of confidence in the professions. The professions have been unable to solve many problems and unable to predict some undesirable effects of attempted solutions. The professionals find themselves in an increasingly complex, changing environment where unique, new, or unusual cases are encountered and the models or theories generated within the scientific paradigm do not apply. There is a growing suspicion that professional schools teach science that does not apply to practice. Again Schon notes:

> The crises of confidence in professional knowledge correspond to a similar crisis in professional education. If professions are blamed for ineffectiveness and impropriety,

> their schools are blamed for failing to teach the rudiments of effective and ethical practice. Chief Justice Warren Burger criticizes the law schools, for example, because trial lawyers are not good at their jobs. In the present climate of dissatisfaction with public schools, schools of education are taken to task . . . Business schools become targets of criticism when their MBAs are seen as having failed to exercise responsible stewardship or rise adequately to the Japanese challenge. Schools of engineering lose credibility because they are seen as producing narrowly trained technicians deficient in capacity for design and wisdom to deal with dilemmas of technological development (Schon, 1987, p. 8).

The crisis in the professions exists and is rooted in "the epistemology of professional practice." This paradigm and its epistemology separates research and its resulting theory from practice.

> What is more, there is a disturbing tendency for research and practice to follow divergent paths. Practitioners and researchers tend increasingly to live in different worlds, pursue different enterprises and have little to say to one another (Schon, 1987).

This can result in models that are not useful to practice and that can hinder the development of the field. While a field can develop from practice or research, a profession needs theory, models or research that have practical applicability in the field. Conversely, practice can develop a field when it can be generalized to a model, principle, or theory that goes beyond the unique case and can be made useful to other practitioners.

However, the schism between theory and research that currently exists in many professions potentially thwarts this type of development and results in isolated practice and impractical and irrelevant science. Schon states that the rational technical models leave practitioners with the "relevance or rigor" dilemma (1987). This model assigns the notion of rigor to a methodology that has become irrelevant to practice.

Management Training

It is our view as well as Schon's that this criticism also pertains to the field of general management. Part of this misdirection lies in the failure of managers to learn the principles of knowledge formation, principles that knowledge consumers and practitioners need to know. As a result, they are not capable of effectively criticizing, altering, or developing the knowledge vis-à-vis their practice as managers in organizations. Thus they espouse theories that are faulty and resistant to change. They cannot do the type of research that John Seely Brown (1991) has called research that continuously reinvents the corporation.

As a result of this failure in the training of professionals, managers have similarly suffered in their ability to learn adequately from their practice. Several authors have written on this problem including Argyris (1982), Argyris & Schon (1974), and Kolb (1984). Argyris and Argyris & Schon focused their criticism on the training of managers and have expressed their concern that the theories that are espoused by managers may not be the same theories that actually guide their behavior. For managers to be effective in their business, they must learn to discard and replace ineffective theory through special processes of learning, which Argyris and Schon call double-loop learning, learning that looks into assumptions, norms and contexts, and frames of reference that guide behavior. However, managers are not trained in the ways of knowing that will help them resolve this problem. This kind of training does not take place.

From a developmental perspective, the manager has learned to manage based on information gathered. First, as a child living in the family, and then in school, the child interacts with another set of individuals, a set in which hierarchy is more salient. Some formal training in management commences when the individual begins to take management courses in college. The individuals confronted with academic theories of managing, some of which have limited "scientific" value and are not very rigorous but appear like clockwork in the curriculum. However, some of these theories may be quite rigorous but seem more difficult to apply. In addition, individuals learn theories of leadership often without explicit concern for integrating the theories into their personal repertoire. Later they get case studies that are designed to provide an experiential base and models of behavior to be used in real management settings, but often the cases are so complex that it is difficult to

generalize from them. Then too, the cases are often provided from a CEO's perspective with much information provided, but little or no training on how to collect the data that leads to this perspective. How to apply the information or implications at lower levels of the hierarchy in organizations with cultures different from the case are also not addressed.

During an internship in some organization or on their first jobs, they get to watch real managers doing their thing. They may be mentored by an experienced senior manager. As new managers, they probably will participate in training and development activities sponsored and planned by the organization. They may receive two or three or four whole-day sessions on the skills of leadership. They are probably evaluated but may or may not get feedback on their learning.

These training programs are often generic off-the-shelf packages that are difficult to apply, especially when the training is given to isolated individuals in isolated parts of the organization. In addition to the above, the manager will learn much from the actual job of managing. Experiencing what works and what doesn't work will become part of a repertoire of behaviors and feelings. These will become part of a reservoir of concrete experiences that are integrations of values and feelings. Some managers may stop to reflect and observe their behavior and the behavior of others and to compare this with the previous education and training. A very few may actually begin to develop their own theories of managing. But, as a general rule, most will try to experiment with new approaches, to see if they appear to work. If they appear not to work, the manager will search for new ideas. They will borrow ideas or parts of ideas from current popular readings and fads and experiment to see how they work.

There are several very important classes of elements that are missing from the picture above. Most managers probably do not learn to think about the ways they acquire certain types of knowledge and how these different types of knowledge are related to each other and how they are related to managing. For example, managers may not be aware that they have been taught to have a predilection for valuing experimentation and experience but not for other types of knowing or other ways of collecting data. They may not appreciate that the very job of management, as defined in our culture, has forced them into being a nonreflective, reactive knowledge builder who blindly tries new stuff (like forcing participative management). They rarely conceive of a systematic

epistemology of many parts, much less one that systematically evaluates its implications.

Managers may have taken courses in accounting and marketing and operations management and are able to do cost and profitability analyses. They can use complex regression and time series analyses for predicting trends in marketing and use complex mathematics to match production with demand. However, they probably know very little about effectively taking the pulse of their organization, about collecting qualitative data to begin to effectively formulate some grounded theory about the functioning of this particular organization. They undoubtedly have a fetish for quantitative data and relinquish qualitative approaches to mere anecdotes. They probably know next to nothing about the strengths of qualitative research. They may have but the slightest inkling that the academics they learned in college may or may not fit their organization. And they have neither the time, the training, nor the inclination to reflect and build a grounded theory of their own and to see how it relates to academic nomothetic theories. They have barely the slightest idea of how to test and evaluate their inchoate theories in an ongoing organizational setting, if they build such theories at all.

Managers probably know very little about organizational diagnosis from a quantitative perspective and have few insights into the strengths and weaknesses of research design. They do not understand the limitations of quantitative measures in specific contexts. They know very little about quantitative issues of reliability and validity of measurement and can be easily fooled by a persuasive consultant who offers them an off-the-shelf training package (or even a tailored one) that will change the course of the organization.

They know a bit about the systems nature of organizations and people but not much. At some deep level, they may doubt the effectiveness of three or four days of costly leadership without a truly systems-wide perspective. They know you must systematically tie strategy, tactics, training and evaluation to organizational goals. But, they relegate this fear to limbo hoping that human resources or training and development folks know something more.

They know little about their own implicit theories of organizing and managing and how extraordinarily pervasive but subtle these determinants of their management behavior are. It is unlikely they know how difficult it is to

change these implicit and often unproductive theories, even with three or four days of leadership or TQM training.

They may themselves have implicit beliefs in the truth of numbers or experiences, not realizing that both the quantitative and the qualitative approaches can play complementary roles in knowing and changing an organization.

To be sure, the foregoing presentation has been one-sided and biased and has emphasized many of the negative aspects of the situation and few of the positive. Nonetheless the caricature can serve the purpose of highlighting some serious problems. There are a number of sources to which one can appeal to remediate the concerns expressed above. The first of these is to study different ways of knowing and how these different ways can be learned, trained, and assessed. This is primarily the work of David Kolb and his types of epistemological approaches. Second, we present the OARM model, which is an integration of a number of organizational action research models. This is an approach that managers can use in the resolution of many problems.

Kolb and Experiential Learning

Kolb (1984), who in addition to helping us understand the nature of the failure described above, also has provided a very clear delineation of this inability to learn from experience. In doing this, he has introduced some conceptual tools and empirical data for understanding the problems of training managers. Kolb's concepts for evaluating the experiential learning and ways of understanding that managers use is based on his theory of experiential learning.

He has developed a four-facet theory of the types of knowledge that are used in understanding in general. In addition, he has developed a theory of experiential learning that describes both the sequence of learning as well as a theory about the predilection for individuals to be fixated or characterized by one of these four types. Our model is based in part on Kolb's types of knowing and his sequencing, which itself has been heavily influenced by the approach of action research. The four personal knowledge types are variously called divergent, assimilative, convergent, and accommodative. These can be seen in Figure 10-1.
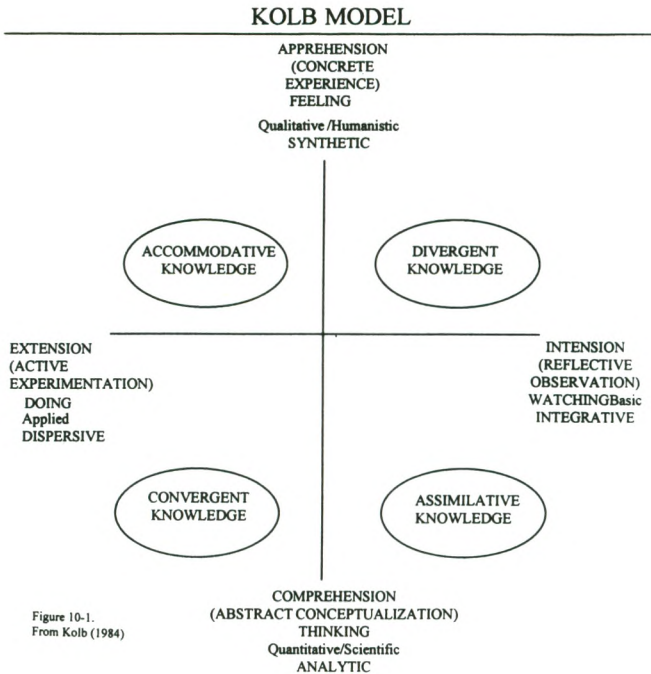
KOLB MODEL

APPREHENSION
(CONCRETE
EXPERIENCE)
FEELING

Qualitative /Humanistic
SYNTHETIC

```
        ┌───────────────┐        ┌───────────────┐
        │ ACCOMMODATIVE │        │   DIVERGENT   │
        │   KNOWLEDGE   │        │   KNOWLEDGE   │
        └───────────────┘        └───────────────┘
```

EXTENSION   INTENSION
(ACTIVE   (REFLECTIVE
EXPERIMENTATION)   OBSERVATION)
DOING   WATCHINGBasic
Applied   INTEGRATIVE
DISPERSIVE

```
        ┌───────────────┐        ┌───────────────┐
        │   CONVERGENT  │        │  ASSIMILATIVE │
        │   KNOWLEDGE   │        │   KNOWLEDGE   │
        └───────────────┘        └───────────────┘
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Figure 10-1.
From Kolb (1984)

COMPREHENSION
(ABSTRACT CONCEPTUALIZATION)
THINKING
Quantitative/Scientific
ANALYTIC

Figure 10-1. The Kolb Model

Divergent Knowledge

 The first of these is divergent knowledge, which is based on concrete experiences that are transformed by reflective observation. Individuals who are oriented toward concrete experience have an emphasis on the immediate human situation and the associated feelings towards understanding of qualitative rather than quantitative aspects of knowledge. The general orientation is toward a synthesis or unity. The orientation toward reflective observation or intention focuses on watching and understanding situations, as opposed to acting in the situation. The variety of knowledge associated with this pure type is highly integrative. Hence the type of knowledge that is generated by these two orientations, divergent knowledge, is "to view concrete situations from many perspectives and to organize many relationships into a

meaningful 'gestalt' with a sensitivity to meaning and values" (Kolb, 1984). The emphasis is on adaptation by observations, rather than action. The term *divergent* is used because of the impact of the diversity of concrete experiences on the reflective state.

Assimilation

The second type of knowledge, that produced by the actions of reflective observation on the abstract conceptualizing style, is called *assimilative knowledge*. The individual with an orientation toward abstract conceptualization is the logician. This is a person who is more predisposed toward inductive logical thinking than toward feeling, and who is a constructor of general theories with a focus on analysis (as opposed to synthesis). This person prefers quantification and abstraction to feeling. Reflective observation focuses on understanding by observation, as opposed to practical application. This is a very systematic, quantitative, and rigorous orientation. In conjunction with the reflective transformation style, this leads to a type of knowledge less concerned with people than with ideas and abstract concepts whose practical value is not as significant as its precision and its logicality.

Convergent Knowledge

The third type of knowledge is the convergent type, which is composed of abstract conceptualization and active experimentation. As an individual orientation, active experimentation involves an orientation toward doing rather than observing, with a more pragmatic and applied orientation, knowledge that is useful or applicable is more important than that which is absolutely true. This active or doing orientation tends to lead to knowledge that is more dispersive than integrative. The combination of this style with the abstract conceptualization style leads to a learning style focused on problem solving, decision making, and practical application of ideas using the logic of the hypothetic-deductive method. The term *convergence* was used to reflect the search for the one, best solution to a question or problem.

Accommodation

The final type of knowledge is derived from the active experimentation mode and the orientation to concrete experience. This style is called *accommodative* because the learner, focusing on feelings and concrete experiences, transforms these by active experimentation without reflection or conceptualization. This type of knowledge would involve decision making and accomplishment of tasks in uncertain situations, a job not unlike those in general or executive management.

Managerial Ways of Knowing

Kolb has characterized general managers both theoretically and empirically as individuals who by bent or training and experience have a predilection for what he calls an accommodative style. This is a style based on both action or active experimentation with a strong basis in the concrete world of feeling. Kolb also holds that a singular style of knowing may not be effective in all situations and that for the highly integrative individual the use of all the modalities of knowing is both possible and much more adaptive.

It is particularly interesting to note that those epistemologies that Kolb views as opposite to those that generally characterize managers, that is, those types who partake of reflection and abstraction, are the very types who Schon has posited as important in professional training. In his recent work (1983, 1987), Schon noted that many practitioners, locked into a view of themselves as technical experts, find nothing in the work of practice to occasion reflection. They have become too skillful at techniques of selective inattention, junk categories, and situation control techniques, which they use to preserve the constancy of their knowledge-in-practice. For them, uncertainty is a treat; its admission is a sign of weakness. Others who are more inclined to use reflection in action nevertheless feel profoundly uneasy because they cannot say what they know how to do, they cannot justify its quality or rigor. For these reasons, the study of reflection-in-action is critically important.

> The dilemma of rigor or relevance may be dissolved if we can
> develop an epistemology of practice which places technical
> problem solving within a broader context of reflective
> inquiry, show how reflection in action may be rigorous in its

own right, and links the art of practice in uncertainty and uniqueness to the scientist's art of research. We may thereby increase the legitimacy of reflection-in-action and encourage its broader, deeper and more rigorous use (Schon, 1983 p. 69).

Researchers and Practitioners

There is a basic antithesis between the professional's ways of knowing, derived from the training that managers receive as professionals and practitioners and that is needed for effective practice in modern organizations. The resolution of this antithesis requires a new model for the training of practitioners (Schon 1987). Practitioners tend to be educated and sophisticated in their understanding and dedicated to an end. They work in a rapidly changing environment, where new complex problems are encountered. They serve clients who have become increasingly demanding in this consumer society. Practitioners want to utilize knowledge and collect data to meet a practical end. It is our belief that the schism that currently exists between research and practice has weakened both. Researchers are often chasing irrelevant problems and are ignorant of the interesting emerging issues in the field. Practitioners often need useful models, research, or theories to aid in the practice of their profession, and these models are often nonexistent. We also believe that the narrowing of this schism could make a positive difference in the practice of the professions and the accumulation of knowledge. The boundaries between these roles must become more permeable. This has begun to happen as practitioners receive more formal education. However, researchers must become aware of the field. This can be accomplished by spending some time practicing in the field doing the equivalent of organizational action research, that is, research whose primary goal is the improvement of organizational conditions and the solution to organizational problems (French & Bell, 1984; Lewin, 1984; Love, 1991; Porras, 1987; Whyte, 1991).

Researchers can also engage in collaborative research with practitioners. This will provide them with an inside view of practice and further practitioners' understanding of research. Whyte's (1991) participative action research (PAR) has been extremely effective in this regard. It is the position taken in this chapter that of the various solutions to these problems, the most important approach and that which has the greatest potential, is one in which

practitioners learn new methods of inquiry, to think beyond their current problems, and pose models and research questions from their practice. In doing this, they need to be more sophisticated in research and measurement methodology so that their conceptualizations will have transferability. They should be systematic in their data-gathering approach, and thus be able to share their finding with a wider audience, including the basic and applied scientists. Finally, they must be able to articulate, doubt, and test their privately held assumptions about their organizational world.

Practitioners as Researchers

As previously stated, this chapter proposes a paradigm that empowers practitioners to practice research to meet their needs and to advance the profession to which they belong. It proposes the integration of practitioner and researcher roles as an alternative to the fragmented model that currently exists. In doing so, it draws much from the past tradition of the action researchers as well as the action science approach espoused by Argyris, Putnam, & Smith (1985) and also the work of Schon (1983). In this way, the needs of individual managers to evaluate their espoused theories and their theories-in-use can be undertaken so that their organizations can function more realistically and can respond more effectively to the need for self-examination and change. Although the role of practitioner only and researcher only still have a place in the professions, the proposal attempts to make the boundaries between roles more permeable. This will empower practitioners, through cross-training in scientific methodology, to pose problems, seek answers, and advance their discipline using techniques usually relegated only to the basic or applied scientist.

The empowerment of individual practitioners is consistent with the contemporary movement we are currently witnessing in organizations when top-down decision making is being replaced by bottom-up and more collaborative models. This new research process can make the knowledge of the professions more relevant and serve greater organizational and social purposes. Practitioner research can provide useful answers, identify problems to be researched, and can result in adding to the body of accumulated knowledge. This can help other practitioners in these turbulent times and provide not only interventions that can make a difference in practice but also the knowledge base that can be useful for basic researchers in pursuing their own ends. The proposed model for practitioners to undertake research in their practice setting

consists of five steps or phases, which usually occur in sequence. These phases are represented in Figure 10-2.
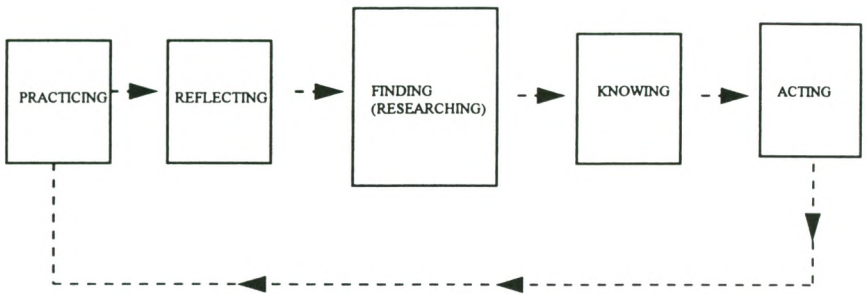
The Oarm Model

Figure 10-2. The Oarm Model

The Organizational Action Research Model (OARM)

Practice

Practice is what the professional does. Practice is that set of experiences and ways of understanding that determine the expected and everyday way of behaving of the manager within an organization. This definition not only includes behavior but also the determinants of behavior as well. Practice can be understood by examining three levels of forces that act upon the individual. These forces include individual, organizational, and external environmental aspects. Individual forces refer to the knowledge, values, interests, role definition, and role behaviors that the manager holds or does with respect to the

job and the organization. These are defined in part by training, personality, professional interests, and level of development as well as the predominant knowledge orientation that the individual prefers (Kolb, 1984). These individual forces act either in concert with or in contrast to forces that define the organization. Organizational forces consist of the goals, expected specific standards of practice, organizational culture, image, preferred epistemology, and general value system that constitute the people of the organization. These forces shape the individual through the general socialization techniques that work to modify or alter individuals to fit existing norms and expectations.

While these organizational forces change over time, often the change is slow and the nature of the change may not necessarily be adaptive or in the best interest of the organization. While it is the individuals who develop and maintain these organizational forces through formal and informal communication patterns and through selection and retention of individuals, more often than not the totality of these forces are beyond the ken of any single individual. Hence, organizational activities can become nonadaptive, and individuals may not possess a clear understanding of how or why problems have occurred or how to change them. The ways of knowing or modal epistemology that is characteristic of the organization may be self-limiting and hence maladaptive. Very often change is required of organizations because of events outside of the organization, such as existing technology, ethics and values systems, markets for organizational services or products, other organizations, regulatory mechanisms at the city, state, federal or international level, as well as models or theories of either technology or organizational functioning. These external forces are in constant change (although the speed of change can vary from one type of organization to another). This change requires that organizations be able to systemically anticipate, sense, and respond to maintain organizational identity and integrity.

Practice then can be conceived of as a complex and systematic set of understanding and behaviors that constitute the established way of proceeding on the part of individuals as they go about their business. These understandings and behaviors are themselves the result of multiple interacting forces derived from the three sources described above. Practitioners do their work guided and determined by all three sets of these forces. Most often they do this using tacit understanding or tacit knowledge. Work behavior is often a balancing or compromise of these forces to keep them in homeostasis. This homeostatic condition can be disrupted gradually or abruptly by a change, breakthrough or

modification in or between these forces. For example, a change in the professional practice, such as those presented by the Total Quality Management movement, has led managers to change their practice and certainly to question personal and organizational ways of doing and understanding. The practitioner possesses tacit understanding of practice, of the organization, and of the environmental impact on practice. This tacit understanding is what Schon (1983) calls knowing-in-action. This knowledge is often acquired through the process described by Kolb (1984) as Apprehension, the gathering of knowledge from concrete experience, which is personal and intuitive and often tacit. This understanding may make practitioners knowledgeable change agents and potential sources of novel answers and new insights to practice problems. However, at the same time, this concrete experience may well be interpreted through of some ineffective implicit theories learned from childhood. These implicit theories may or may not be effective in managing but they can totally define what aspects of the environment are attended to—as well as what aspects are totally ignored. The strength of the internal action researcher is also the greatest weakness. The strength is knowing the values, feelings, context of the practice. The weakness is not being able to reconstrue this practice from an alternative perspective.

When practice fails to be effective, and groups or the organization suffer from inability to sense, diagnose, understand and change, a model for facilitating change is necessary. The approach for this has often been to find a change agent, a consultant who can be brought in to aid the organization in understanding diagnosis and change. Without exception the change agent or consultant would come to the organization and begin to observe and examine various aspects of its structure, its processes, its productivity, and the way it transforms input or raw material into output or finished product or service. This initial stage involves a focus or an orientation toward data gathering and observation of concrete experience in a personal way. This initial step is devoted to the knowledge gathering process, which we have described above, as Apprehension, the gathering of knowledge about others through concrete experience so as to create an intuitive and personal knowledge. The personal model begins with the manager/practitioner as potential change agent. Because of this, the process of understanding or apprehending the organization is shortened in some ways but is made more complex because of implicit beliefs. But before change can take place, there are many steps in the inquiry process necessary to produce effective change. The first of these begins with the understanding of practice as we have described above.

Reflecting

Reflecting is defined as a thought occurring in consideration or meditation. Kolb (1984) describes reflective observation as "understanding the meaning of ideas and situations by carefully observing and impartially describing them." It emphasizes understanding as opposed to practical application: a concern with what is true or how things happen. Thus the second step in the model requires that an individual manager step back from practice, from the collection of concrete experiences, and reflect on that practice. Schon in his book *The Reflective Practitioner* (1983) describes reflection-in-action:

> When we go about the spontaneous, intuitive performance of the action of everyday life, we show ourselves to be knowledgeable in a special way. Often we cannot say what it is that we know. When we try to describe it we find ourselves at a loss, or we produce descriptions that are obviously inappropriate. Our knowing is ordinarily tacit, implicit in our patterns of action and in our feel for the stuff with which we are dealing. It seems right to say that our knowing is in our action. Similarly, the workaday life of the professional depends on tacit knowing-in-action. Every competent practitioner can recognize phenomena—families of symptoms associated with a particular disease, peculiarities of a certain kind of building site, irregularities of materials or structure— for which he (she) cannot give a reasonably accurate or complete description. In his day-to-day practice he makes innumerable judgments of quality for which he cannot state adequate criteria, and he displays skills for which he cannot state the rules and procedures . . . On the other hand, both ordinary people and professional practitioners often think about what they are doing, sometimes even while doing it. Stimulated by surprise, they turn thought back on action and on the knowing which is implicit in action. They may ask themselves, for example, "What features do I notice when I recognize this thing? What are the criteria by which I make this judgment? What procedures am I enacting when I perform this skill? How am I framing the problem that I am trying to solve?" (Schon, 1983, pp. 49–50).

The reflecting phase is composed of multiple substages including both a framing as well as an exploration substage. Reflection is the point where problem awareness begins. It is the beginning of framing the problem. Kolb would call the kind of knowledge generated by this activity *divergent knowledge;* that is, knowing which is informed by the meaning and values of a particular set of individuals within an organizational setting. It is in this domain of knowing that the internal practitioner consultant has the greatest advantages as well as the greatest deficit, because the wealth of concrete experience to be transformed by reflection essentially already exists. But the predilection to know only that which our implicit theories allow us to know is our greatest weakness. Divergent thinking is probably quite close to the kind of connected knowing described by Belenky, et al. (1986). It is in this modality that alternative views of organizational reality can be entertained and perhaps a single gestalt developed. This gestalt is intuitive: it is composed of a complex of ideas, causal connections of multifold variables. It is colored by values derived from a history and being socialized in an organization knowing what is possible and what is acceptable given the politics and culture. This stage occurs because expected results of a particular kind did not occur. A prior form of practice, which involved acting or behaving within the organization has ceased to produce the kind of expected results. As Argyris, Putnam, and Smith have described it:

> Drawing on these ideas, we can now sketch a more comprehensive and dynamic model of the epistemology of practice. The agent, confronted with a complex, puzzling, and ambiguous set of circumstances, draws on tacit knowledge to frame the situation and act. The consequences of this action generate information about the situation and about the suitability of the framing and action of the agent. The agents interprets this information, again drawing on tacit knowledge. If the action-as-probe generates information inconsistent with the original framing, if the action-as-move does not achieve intended consequences or leads to unintended consequences, or if the action as hypothesis is disconfirmed, the agent may be led to reflect on the tacit understanding that informed the original framing and action. This reflection may or may not lead to a reframing of the situation and a new sequence of moves (Argyris, Putnam & Smith, 1985, p. 51).

Problem framing within reflection is the beginning of the process that a scientist would call theory construction. It is also part of the activity that action researchers call diagnosis. It is the internal search for understanding of phenomena in terms of cause-and-effect relations so that control can be regained. In this case, we refer to control of organizational processes that may have gone awry. To accomplish this understanding, tacit theory, that which we hold in an unreflective way, needs to be made explicit and overt. The process for doing this requires several steps. A detailed presentation of this is beyond the scope of this chapter. However, in brief, the process involves the active work of writing one's observations of concrete experience as well as writing out in considerable detail the implicit causal model or models that inform understanding of the problem. It is crucial that this be done in a written form, because the next step in reflection is to explore, to undertake secondary research, that is, library research, looking at the ways others have theorized about such problems and the kinds of concepts and constructs they have used. However, reading others' research can modify or change one's understanding and can even lead to a reframing or altered perception of the problem. This may or may not be helpful. To maintain the integrity of the original observations, the basic concrete experiences, and the reflected theories that related these to each other, must be written. We use the term *integrity* here, but this may be misleading. It is absolutely critical that the individual manager/researcher confront her or his own implicit theories learned in earlier years. These single-loop models, as Argyris calls them (1982), are subtle and pervasive. They may be effective in the diagnosis process or again they may be terribly damaging. They are hidden, illogical, covert, and virulently resistant to change. In order to discover them, they must become open, expressed, overt, and amenable to exploration and logical understanding through the reflective process. This is accomplished by writing them in their original "integrity" so they can be evaluated. An example of this issue is how many managers profess theory y but perform theory x. In addition, it is important that the researcher also consider a constructivist perspective. Here the qualitative research approach of interviewing others in the organization with a concern for connected (Clinchy, 1996) knowing, or epistemology, is important. Since the organization and its various construals by its members is the focus of concern, an accurate diagnosis of others is critical. This too must be written and consistent with qualitative research methodology and checked out, through consultation with the informants. In a thesis, this would be a detailed description of the concrete problem but with the constructivist's understanding

that organizational reality may have multiple facets. Here the practitioner/researcher is building a grounded theory.

The next aspect that follows the framing of the problem is exploration. With a framed question and perhaps a number of tentatively held hypotheses about a diagnosis, the practitioner explores the body of accumulated knowledge to discover alternative ways of naming or conceptualizing the problem. The discovery of new ways of conceptualizing may produce a new consciousness about the problem. It is this secondary background research and exploration that enhances the reflection process and begins the process Kolb calls abstract conceptualization. The practitioner approaches the exploration of accumulated knowledge at this stage much as a researcher would. The difference is that the practitioner's inquiry began from practice; a researcher usually begins with a knowledge of the discipline and is looking to test a logically derived hypothesis. Practitioners have methods of exploration, in addition to library research, which lead to problem framing. These include interviews with other knowledgeable or experienced practitioners. Particularly useful are interviews with practitioners who have experienced a solution to the problem. Collaboration with an informed third party, such as an academic or consultant, can also be a useful approach. The initial exploration can produce models or theories that approximate (or are analogous to) the problem encountered. Schon calls these exemplars. Kolb calls the type of knowledge that derives from reflection and causal analysis assimilative knowledge. These two steps in the reflective process, framing and exploration, are interactive, with each one informing the other in a circular pattern until the practitioner is comfortable with the fit of the problem as framed. The result of this stage is a set of research questions, framed by the practitioner in the context of accumulated knowledge. The role played by the practitioners in this step is that of the reflective practitioner. The practitioner has moved from tacit practice to an understanding the problem, perhaps even multiple understandings.

As an addition to the reflective and abstract conceptualization processes, we would also add what we have come to call meta-assimilation or meta-reflection. It is very useful to be able to understand the totality of the research process from the Kolbian perspective. Hence, we would urge each reflective practitioner to also reflect on the Kolbian theory and epistemology. This opportunity to reflect on the very process of reflection provides a conceptual road map, as it were, so the action research has a sense of the role of each activity.

Finding

The third stage of the model is that of finding. In this stage the practitioner plays the role of a researcher and moves from the various understandings of the problem to a data-based knowledge of the problem in its organizational context. The various steps in this stage are quite similar to those taken by an independent researcher. The practitioner would further explore in a focused manner his or her current understanding of the problem. This exploration would include further library research and probing and inquiry within the organization. Probing and inquiry may also involve some data collection techniques, such as a sensing interview, process observation, and ethnographic data collection, or they may involve the use of more quantitative measures if this is appropriate. Practitioners have an advantage in using these techniques based on their acceptance as a participant and their holistic understanding of the organizational context. It may seem that this data collection is repetitive, that is, members of the organization have already been consulted. But the participative imperative in identifying acceptable realities requires not only "buy in" but a mutuality of theory and constructs. Based on their acceptance as participants and their holistic understanding of the organizational context, practitioner/scientists are ready to design a study. The same rules and decision considerations of scientific inquiry are present in the present approach as they would be in any research design. Issues such as internal and external validity, measurement reliability, and validity are extant in this research setting, which will be done in an operating organization. This "in vivo" setting presents the same constraints and problems that are found in action research. Hence, the practitioner must very often make methodological choices that force compromises, which can threaten the internal and external validity of the study. The final aspect of this stage is the data collection summary and analysis. It is in the context of finding,, that a clear understanding of the research modalities of qualitative and quantitative techniques becomes important. What can one learn and find from one approach? What can one learn and find using the other? Here we would urge not only triangulation of methods using multiple measuring techniques but also multiplicity of epistemology.

Knowing

The fourth stage is that of knowing. It is in this stage that the practitioner integrates the knowledge gained through all other stages. The first step is to

interpret the data analyzed in the prior stage. The practitioner then integrates the tacit knowledge from practice, the reflection from the second stage, the accumulated knowledge discovered, and the data collected in the finding stage. This integration takes place in the context of tacit understanding of the three forces—personal, external, and organizational. Practitioners integrate this knowledge in the assimilative and divergent and convergent modes (as described by Kolb).

The roles played in this stage are multiple and include theorist, reflective practitioner, data analyst, and model builder. Hence, the practitioner moves from being a researcher to becoming an expert in the situation. The practitioner has knowledge from many domains and several epistemologies and now has an informed basis for generating policy alternatives and for choosing among alternative action possibilities. It is here that a less-tentative diagnosis can be posited. Along with the diagnosis is a theory, applicable to this organization and its contexts. The theory suggests a causal understanding of the problem, in all its systemic complexity, as well as a set of interventions that can alter the situations.

Acting

In this final stage the practitioners uses the informed basis for action. The roles played are that of change agent and expert. The steps are to plan for implementation and evaluation, to actually implement, to gather evaluative data through feedback and evaluate mechanisms. Hence, the practitioner moves from expert in the situation to an experimenter and informed practitioner. The resultant action may be a change in the system, implementation of a new model or practice, growth in knowledge, or, in the event the implementation was not effective, a clearer understanding of the situation that arises from action. This final kind of knowledge is what Kolb calls accommodative. It partakes of the result of active experimentation or action in conjunction with the apprehension of the results of action. Hence, the practitioner/scientist returns to being a practitioner, more informed in the area as a result of the cycle.

In conclusion, just as any scientifically based system of inquiry tends to be repetitive, self-correcting, and open-ended, so too, the model proposed above would have these same characteristics. To be sure, there are many aspects of the model that we have not covered in this presentation and that are of considerable

importance. These include, but are not limited to, issues of values in the choice of action alternatives, ethical problems, and considerations in doing organizational research, a specific methodology for examining one's own and others' constructs in the organizational diagnosis process as well as the manifold difficulties that reside in any self-diagnostic activity.

The OARM model represents an integration of both types of epistemologies and research practices. A review of other action research models (Elfenbein, Brown & Knight, 1996) using the Kolbian categories suggests that the actual sequencing of these activities need not be in the exact order suggested, and there may be repetitive sequences, such as moving back and forth between concrete experience, through the reflective process to abstraction several times before moving on to active experimentation. It is also possible to do mind experiments as part of the reflective process: theories are tested in imagination. In addition, many of the action research models confirm the necessity of participative research. In all of the action research models the Kolbian epistemologies are used.

Getting There

Elements of the OARM are known by practitioners through their education, training, and practice. However, they are scattered, isolated, and nonsystematic. Practitioners must start to use the OARM in a systematic way. Like an athlete or a musician, a practice or rehearsal is useful in developing the model as a way of approaching a problem. Creating a laboratory or using OARM as an alternative approach to a real problem is a good way to start. Applying the OARM model in a "community of practice" or a peer group of learners is highly recommended.

Kolb's theory provides practitioners with one method of understanding their metacognition, or how they think. Only through self-understanding of how they think and awareness of their assumptions in their practice, can practitioners construct new theories-in-use, and develop breakthrough solutions.

The OARM stresses the systematic collection and analysis of data. It is through data that we can truly question our assumptions and the meanings we have constructed, and test the applicability of the models and solutions we have created to the all-at-once practice environment. It is advised that the

practitioner who is new to applied research find an experienced person to act as a methodological consultant. This will free the practitioner to reflect on the problem at hand. This also brings together the world views of implicit and rational technical knowledge. Over time, the consultant will be needed less and less. But in the beginning the consultant is the coach, or the maestro, of the OARM.

When we speak of data or research methods, we implicitly mean data and methods that are labeled both quantitative and qualitative. Just as we have argued for the integration of theory and research with the rich, multivariable experience of the practice field, we argue that quantitative and qualitative data are in fact one the same in the practice environment. Both contribute to our understanding of phenomena, and alone both have limitations in describing the practice environment. The goals are to improve practice and develop processes that allow us to continually improve practice. The richness of data allow us to do this.

An example from marketing demonstrates how we naturally integrate data collection. To test a new product we survey a scientifically determined sample to determine what respondents like and don't like about the product. When we find an item they do not like, we want to know why. So, we use focus groups to get in-depth, multivariable data on the item. This often leads to a survey, further testing our findings.

The OARM has several uses for the training evaluator. The most obvious application is when confronted by a problem or assignment that involves a new knowledge area or an area with rapidly changing knowledge. The OARM is a systematic way to understand, implement, and evaluate its applicability to the practice field. The same application of OARM can be done as an evaluative method for any intervention. These interventions can be what you are already doing or the testing of a new intervention.

OARM represents one way of adapting in an ever-changing practice environment, and applying new knowledge in the middle of an information explosion. The OARM systematically applied can provide practitioners with a process to test their assumptions, which guide their practice. This could result in a reconstruction of their frame of reference through which they act and make meaning. This could result in a new personal paradigm of practice and breakthroughs in the reflection in action.

For the training-and-development evaluator, this can be difficult and painful. As a new personal paradigm of practice is developed, assumptions about the very nature of your work may come into question. A more systems-oriented view will grow, and the interconnectedness among data, interventions, and results will become more apparent. Eventually, your practice may not even resemble that which you now do every day. However, the potential growth in your practice and benefits to your organization and customers is worth the struggle.

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