
Innovations and Ideas

Before the Trainer Comes: A Group Approach to Technological Change

Sara F. Fine

This provides a description of a workshop intended to diffuse resistance and help prepare staff for technological innovations.

Organizations undergoing technological change discover several truths very quickly. They discover that time projections generally prove to be unrealistic, systems do not always come up on demand, and efficiency declines and stays down longer than had been anticipated. It has become a truism that an organization's strategy for change must account for "glitches" and slowdowns; flexibility, patience, and well-tempered frustration are the order of the day. Unanticipated technical problems no longer come as a surprise.

But organization managers have also discovered that even with the most careful planning, unanticipated second-order changes in the social structure of the organization will occur. They have learned too that even with careful attention to the psychological environment that surrounds the planning process, and even with meticulous adherence to the generally accepted principles of managing people and change,

some staff members will continue to be actively or passively resistant to the technological event—despite the inevitability of its occurrence and despite the excellent and often expensive training provided to ensure its adoption.

Resistance to technological innovation has always existed among workers whose lives are affected by organizational change, and managers of organizations have always been conscious of its existence. But the most common organizational strategies for dealing with resistance have been either to wait it out or to weed it out, assuming that a resistant employee will learn to use the system and love it, or if not, will encounter enough internal or applied pressure to leave the organization.

But it does not always work that way. Some organizations continue to endure resistant employees and, in fact, it is often the organization that learns to live around a problem employee rather than the employee who changes and adapts. Resistance unresolved goes underground, becomes passive, and festers quietly. Or it becomes overt and threatens the authority of management and the stability of the

Sara F. Fine is an associate professor of library and information science at the University of Pittsburgh and a psychologist licensed in Pennsylvania.

system
and c
creas
creas
(Bro
solve
nonus
tem, b
system
Res
organ
who
1982).
and b
tionsh
cernib
Resist
drawin
psych
change

In m
knowl
the pr
with ti
cepted
devised
allowin
particip
strateg
cific co
deal w
through

The t
ance is
the use
assump
matical
steps in
tion ger
prepare
change
deal wit
poseful
ers who
perhaps
able dar
zation r

In pre
cal chan
ers usua

March 1

system. It manifests itself in both obvious and obscure ways, often resulting in increased stress on the worker and decreased productivity for the organization (Brod, 1984; Hirschowitz, 1974). Unresolved resistance can result not only in nonuse or misuse of a technological system, but can lead to actual sabotage of the system's operation (Dowling, 1979).

Resistance to technology is costly to an organization and painful to the individuals who are subject to its effect (Hemry, 1982). Computers affect our personalities and behavior, and thus our personal relationships and our work attitudes in discernible and sometimes alarming ways. Resistance by employees may be a way of drawing the organization's attention to the psychological dimension of technological change (Fine, 1979; Kazlow, 1977).

In most organizations, resistance is acknowledged but dismissed as an irritant in the process of change that will dissipate with time. Although the commonly accepted strategies for planned change are devised to reduce resistance, primarily by allowing the organization's members to participate in the planning process, those strategies generally do not contain a specific component for helping workers to deal with their resistance and to work through it.

The traditional way to deal with resistance is to send employees for training in the use of the new technology on the assumption that such training will automatically result in changes in attitude. The steps in planning for technological innovation generally do not include an effort to prepare workers for coping with the change before sending them to learn to deal with the technology itself nor a purposeful diagnosis to identify those workers who cannot adapt and who should perhaps be moved off-line before predictable damage to themselves or the organization results (Lange, 1984).

In preparing themselves for technological change, organizational decision makers usually avail themselves of the many

resources for acquiring technical and non-technical information and ideas, including information and ideas for managing people through the inevitable stress that accompanies major innovational transition. The number of books, articles, seminars, conferences, and workshops on the selection and implementation of various kinds of technological systems proliferates daily.

In addition, there are numerous seminars and workshops available on the "human factors" aspect of technological innovation, such as ergonomics, space planning, managing change, and managing and supervising people. Most of these workshops are presented from the managers' point of view and focus on how to create a climate in which change can flourish. There are numerous opportunities for individuals to learn about computers in general and including countless seminars in which participants learn how to apply technology to their particular work areas. But there are virtually no opportunities available for employees to help them deal with the pain of the changes that are being forced on them.

The workshop plan proposed here addresses this issue. Whereas most workshops are geared toward teaching managers how to manage others, this group experience is from the point of view of the individual who is subjected to technological change before he or she is ready to accept it while defenses are high. The need for this kind of activity, as well as the theoretical bases for the workshop's content, resulted from the findings of a series of national research studies on resistance to technological innovation conducted at the University of Pittsburgh under grants from the U.S. Department of Education (Fine, 1979, 1980), and from my subsequent experiences in presenting workshops for organizations in the throes of technological changeover.

The purpose of these studies was to determine those factors that are related to resistance to technology: demographic and personality factors; beliefs, attitudes,

and values; and fears and fantasies about technology. One of the major findings was that resistance *can* be identified and measured, that it is an affective rather than a cognitive reaction, and that it is not a function of personality. Resistance is associated with strong sets of particular beliefs and fears. The findings also indicated that an individual's level of resistance is related to the degree of participation he or she has in the organization's decision-making process. It became clear from the results of these studies and from consulting with a variety of organizations that training for and implementing technology without preparing the employees in a significant way for it would leave a percentage of employees with their resistance more engrained and their defensiveness more strident. Some intervening step in the change process was needed to break the cycle.

If resistance is an emotional response based on fears the individual may not have been able to articulate, the attempt by an organization to reduce resistance through reasoning, cajoling, punishing, or behavior change (i.e., forcing the individual to attend training sessions or to use the technology) are not the most effective ways to reduce resistance. The proposed workshop is based on the premise that quality relationships and open communications are related to the acceptance of work-related change (Vielhaber, 1983) and that the most effective way to change entrenched attitudes is by dealing with their emotional component.

This workshop has been conducted with a number of groups, ranging from all staff members of a large urban public library where a series of four workshops were made available, to small groups of 8 to 10 people who came from different organizations and institutions. To date there has been no quantitative study to determine if the workshop experience resulted in measurable changes in attitude, but the verbal reactions of participants, both employees and managers, have been positive.

WORKSHOP GOALS

The purpose of the workshop is to provide a vehicle for people to express both positive and negative attitudes to the changes that are taking place in the organization. It is crucial that neither the group leader, the organization's administrator, nor the participants themselves believe that the purpose is to pressure those who are resisting technological change into acceptance. The specific objectives of the group experience are (a) to allow resisters to voice their fears and concerns and (b) to teach the advocates of technology to listen to the resisters without trying to minimize their concerns, without making them defensive of their position, and without causing them to retreat into silence. If both resisters and nonresisters can leave the experience with an understanding of the phenomenon of resistance, both in themselves and in other people, the defensive posture of the resister is likely to be softened and the potential for growth, change, and free choice is enhanced.

GROUP STRUCTURE

This workshop has been conducted with both large and small groups. When the group was large, smaller groups were formed for discussion. For the communications segment of the workshop, a "fishbowl" format was used (i.e., the trainer worked with one small group while the larger group observed).

Some of the groups have been in-house; that is, they have included members of the same organization, in which case it has been advantageous to have various levels of the organizational hierarchy present. Other groups have been formed from different organizations. The format is basically the same in either case.

In publicizing and promoting the group event and in structuring group participation, it is essential that the theme be clearly presented and that the purpose be clearly defined. This is not an activity for

resisters only; the goal is not to convert resisters into advocates for technological progress but to give participants the opportunity to discuss their various—varying—feelings and experiences regarding technology and change.

In preventing the workshop to the group itself, the leader needs to point out to most people, even those skilled and experienced with technology, are ambivalent that there are times when we all have misgivings and fears (Fine, 1979, 1983). The questions and issues posed in the workshop, described below, are related to all participants, whether they are resisters of technology or advocates. The purpose of the group experience is to have individuals talk about technology in a clear and useful way and to listen to and understand the personal and organizational issues at stake. For this to be achieved, participants should have a variety of attitudes and levels of sophistication regarding technology.

WORKSHOP LENGTH

The ideal length of time for the workshop is 2 days, but it has been conducted successfully in 1 full day. There are four phases in the workshop process, and the important issue is that the workshop proceed through all four phases. In the standard format, lecture and discussion time is compressed, the number of exercises is reduced, and the fishbowl exercise is conducted only once.

EXPECTED OUTCOMES

Workshop participants have reported the following outcomes: (a) reduced tension about the technological change; (b) greater awareness of the source of resistance, particularly if it originated in some aspect of organizational life and had been displaced onto the technology; (c) greater ability of resisters to voice their concerns and fears; (d) a heightened sense of control that they are in control of the

resisters only; the goal is not to turn resisters into advocates for technological progress but to give participants the opportunity to discuss their various—and varying—feelings and experiences regarding technology and change.

In presenting the workshop to the group itself, the leader needs to point out that most people, even those skilled and experienced with technology, are ambivalent, that there are times when we all have misgivings and fears (Fine, 1979, 1980). The questions and issues posed in the workshop, described below, are relevant to all participants, whether they are resisters of technology or advocates. The purpose of the group experience is to help individuals talk about technology in a free and useful way and to listen to and understand the personal and organizational issues at stake. For this to be achieved, the participants should have a variety of attitudes and levels of sophistication with technology.

WORKSHOP LENGTH

The ideal length of time for the workshop is 2 days, but it has been conducted effectively in 1 full day. There are four phases in the workshop process, and the important issue is that the workshop proceed through all four phases. In the shorter format, lecture and discussion time are compressed, the number of exercises is reduced, and the fishbowl exercise is conducted only once.

EXPECTED OUTCOMES

Workshop participants have reported the following outcomes: (a) reduced tension about the technological change; (b) greater awareness of the source of resistance, particularly if it originated in some other aspect of organizational life and had been displaced onto the technology; (c) greater ability of resisters to voice their concerns and fears; (d) a heightened sense for resisters that they are in control of their own

lives; and (e) a plan of action for dealing with the technological change. One of the most important changes that has been observed is not in the resisters, but in those who came to the workshop with protechnology attitudes. Their increased ability to listen to resisters without feeling the need to debate them generally resulted in a more positive state of communication in the organization and more effective negotiation of the different points of view.

CONTENT AND FORMAT

A series of group exercises and discussion questions for the workshop has been developed. The following is a general overview of the objectives and content of each phase of the workshop process.

Phase I: Lecture and Group Discussion

The first phase has two themes: (a) a description of the resistance phenomenon through a discussion of research results, thus relieving the fear that resistance is necessarily related to personality, age, or sex; and (b) discussion of organizational behaviors that accompany change and the predictable ways that organizations treat resistance. Emphasis is on the usefulness of resistance in slowing the speed of change, in pointing to possible negative consequences, and in forcing the organization to attend to the human and social aspects of the proposed change. In discussion, resistance to technology is related to other life experiences, with focus on the sense of loss and the need for grieving that accompany some kinds of change for some people in the context of their current life experiences.

The goal of this phase is to present resistance as normal and predictable, not the result of stubbornness, illogic, or personality defect. Group participants will often laugh and nod as they recognize

their own behavior and the behavior of their colleagues and administrators. Tension is reduced and resistant members begin to feel free to describe their negative—and positive—beliefs and fears. They also begin to associate their resistance with specific experiences in their personal and work lives. In the first phase of the workshop, the group leader makes it clear that this is not a discussion of *one* organization or of *this* organization but that *all* organizations react to the phenomenon of technological change as a stressful event.

This session ends with an exercise in change. Participants are given a numbers association puzzle to complete and are then asked to complete the same puzzle four more times. With each subsequent try, efficiency and speed increase. When the participants attempt to complete the puzzle the sixth time, they find the puzzle has changed. Discussion concerns how changing the exercise affects performance and what feelings result from the change. Participants learn that resistance to change is a universal human experience.

Phase 2: Communication Training

The next segment is a fishbowl in group communication. One participant presents a problem to the fishbowl group and the group is given "instructions" on appropriate helping responses. They may not disagree, advise, or ask leading or irrelevant questions. They are instructed in the use of reflective, clarifying, summative, and problem-solving responses. The exercise is repeated until all members of the group have had an opportunity to participate in the fishbowl.

Discussion following the group exercises focuses on the new learnings that emerge from the experience, particularly that listening attentively without debate increases understanding in the listener and self-awareness in the speaker.

46

Phase 3: Small-Group Discussions

This phase begins with a review of the principles of effective communication learned in the preceding session. Then small groups are formed to discuss the following series of questions. The group leader intervenes in these discussions only to point out when someone has reverted to argumentative or debate responses.

The small groups are given a series of questions to discuss. For example:

What are the things you will miss when the new technology is introduced?

What is your metaphor about technology? Finish the sentence: "Technology is . . ."

Are there changes in the way people act in your organization since the new technology was introduced?

How does your organization treat people who don't like the whole idea?

What are some of the changes going on in your own life?

Were you consulted about the plans to bring in technology? If you were consulted, at what point?

Who are your friends in the organization? Where do they stand in the organization's hierarchy? How do they feel about technology?

Can you describe your thoughts and feelings about technology? Do your thoughts sound logical to you? Are your thoughts and feelings compatible?

How have other people reacted when you tried to voice your feelings?

Have outside experts (consultants or trainers) been brought in to help with the transition? How would you describe them?

What is the worst fear you have about what's happening?

Do you feel that technology has become a manipulative force in your life?

The general discussion that follows the small-group session concerns what partici-

Journal for Specialists in Group Work

pants have learned about their own attitudes and the attitudes of others.

Phase 4: Individual Tasks and Group Feedback

Individuals are asked to spend some time making up (a) a list of things that the organization might reasonably do to make the changes going on more acceptable to them, and (b) a personal reaction to the following questions:

What is the source of my resistance?

What are the aspects of my work life that I can control?

What are the aspects that I can't control?

What am I going to do about them?

A third task is for each participant to make up a personal plan of action. For some that may mean learning more about the technological changes that are occurring and finding the means to use these new tools in a way that will most benefit themselves in the performance of their work. For others it may be to address some other personal or professional issue that has been producing static or stress. For still others it may mean to rethink or renegotiate their role in the organization—perhaps even to think about leaving. In any event, the individual begins to take some control and to behave purposefully.

As a conclusion to the workshop, participants discuss their plans of action in their small groups and test out their practicality and soundness with the other members of the group. If administrators are present at the workshop, it is sometimes an opportunity to negotiate concerns and differences.

CONCLUSION

Although this workshop on resistance to technology does not deal with technology

itself, it does concern itself with some of the ramifications of technological change—positive and negative, personal and organizational, individual and societal. It is not intended to change resistance into acceptance, but to allow the voice of resistance to be heard, to release resisters from fear of their own resistance, and to empower resisters to become a positive force in the organization, with the freedom to think and act with reason.

REFERENCES

- Brod, C., & St. John, W. (1984). *Technostress: The human cost of the computer revolution*. Reading, MA: Addison-Wesley.
- Dowling, A.F., Jr. (1979). *Hospital staff interference with medical computer system implementation: An exploratory analysis* (Document No. WP 1073-79). Cambridge: Massachusetts Institute of Technology, Alfred P. Sloan School of Management.
- Fine, S. (1979). *Resistance to technological innovation in libraries* (Project No. 475AH70073; Statistical Report). Washington, DC: U.S. Department of Health, Education, and Welfare. (ERIC Documentation Reproduction Service No. 226730)
- Fine, S. (1980). *Library education and resistance to technology* (Project No. 475AH80037). Washington, DC: U.S. Department of Health, Education, and Welfare.
- Hemry, J.H. (1982). Technological change and the experience of stress. *Dissertation Abstracts International*, 43, 1290B.
- Hirschowitz, R.G. (1974). The human aspects of managing transition. *Personnel*, 51(3), 8-17.
- Kazlow, C. (1977). Faculty receptivity to organizational change: A test of two explanations of resistance to innovation in higher education. *Journal of Research and Development in Education*, 10(2), 87-89.
- Lange, J.I. (1984). Seeking client resistance: Rhetorical strategy in communication consulting. *Journal of Applied Communication Research*, 12 (1), 50-62.
- Vielhaber, M.R. (1983). Communication and attitudes toward work-related change. *Journal of Applied Communication Research*, 11(1), 1-16.