

# LEARNING THEORIES AND TRAINING — PART I

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GORDON L. LIPPITT

(APRIL-MAY, 1966)

Attempts are often made to distinguish between training and education. Some educators feel that training directors are not engaged in education. Most training directors believe they are. Educators tend to make this distinction: training is narrow in scope and involves only learning that is directly related to job performance, while education is concerned with the total human being and his insights into, and understanding of, his entire world. These attempts to distinguish between training and education seem petty inasmuch as both are concerned with the process of human learning.

Berelson and Steiner define learning as "Changes in behavior that result from previous behavior in similar situations. Mostly, but by no means always, behavior also becomes demonstrably more effective and more adaptive after the exercise than it was before. In the broadest terms, then, learning refers to the effects of experience, either direct or symbolic, on sub-

sequent behavior."<sup>1</sup>

For the training director, learning would seem to imply these kinds of things:

a. Knowing something intellectually or conceptually one never knew before.

b. Being able to do something one couldn't do before — behavior or skill.

c. Combining two knowns into a new understanding of a skill, piece of knowledge, concept, or behavior.

d. Being able to use or apply a new combination of skills, knowledge, concept, or behavior.

e. Being able to understand and/or apply that which one knows — either skill, knowledge, or behavior.

Since the training director is concerned with learning, it follows that he should be concerned with learning theory. Training directors often talk about the learning theory that underlies their training. However, most of us do not have a good understanding of learning theories and their application to our training efforts. It is through the eyes of the training

director that the authors have ventured into an overview of learning theory.

As they design training programs, training directors are confronted by many factors about which they must make decisions:

a. *Desired Outcomes for the Learning Experience.* This can range from complex comprehension of organizational dynamics to simple manual skills.

The *managers* who underwrite training programs normally stipulate an entirely different set of training outcomes. These usually are identified as reduction of costs; increased productivity; improved morale; and a pool of promotional replacements. Sometimes these are confused by training directors as outcomes of training that are affected by learning theory. It seems to us that these may be results of training but that learning theory does not directly relate to these as outcomes.

b. *Site for Learning.* Training directors are concerned whether learning best occurs on the job; in a classroom; on organizational premises or off organizational

premises; university or other formal site; cultural island; or at home.

c. *Learning Methods.* These are on a continuum from casual reading to intense personal involvement in personal-relationship laboratories.

d. *Grouping for Learning.* Our grouping of learners can involve all combinations from dyads to audiences of 1,500.

### Theory vs. Corollaries

As we work with, and manipulate, the kinds of variables listed above, we tend to confuse them with learning theory. For example, a training director will say "My theory of learning is that employees learn best when placed in small discussion groups at a training site removed from the plant." What is not clear to most training directors is that the variables identified above result in a myriad of devices and techniques that stem from, and are most effectively utilized by, a given learning theory. In and of themselves they are not learning theory.

Just as we confuse learning theory with the variables discussed, the use of the terms "learning theory" and "learning theory corollaries or principles" can be confusing. Usually the learning theory can be stated very broadly — for example, "Learning occurs when a stimulus is associated with a response."

From this generalization about how learning occurs, a number of specific learning laws, rules, or statements are derived — for example, "Repetition of a response strengthens its connection with a stimulus." Thus, the statement, "problems are difficult to solve when they require the use of the familiar in an unfamiliar way" is a corollary of the Behaviorist Learning Theory School. It is the learning theory corollaries that most often serve as the application guides to the trainer.

Some research findings about learning seem to be unrelated to any particular learning theory and will be found in the literature as isolated pieces of research. Two examples follow:

a. Sleep immediately following learning results in more retention than when the subject stays awake after learning (even if he gets the same amount of sleep before the retention test).

b. Simple facts do not seem to be learned during sleep, even when they are presented throughout the night by tape recording.

We have discussed corollaries in detail because a training director sometimes chances upon one or more of these and incorporates them into his training design. He then says "Here is the learning theory that I am employing in my training activity." Sometimes the corollaries he employs have been borrowed from, or are derived from, several learning theories and so would appear to be inconsistent. However, this may be quite valid. This is so because the content and training objectives for a given training program may include both skill and conceptual training. Each of these kinds of training would tend to borrow techniques from different learning theories.

Our major point here, however,

is that training directors frequently confuse a learning theory corollary with a basic learning theory. A learning theory is always greater than the corollary. In using the corollary, the training director is often unaware of the major learning theory which lies behind it.

### What is Motivation?

As one plows into the learning theory literature, one is confronted by the problem of motivation. Can you motivate a learner to learn? Is understanding learning motivation a prime requisite of the training director and instructor? Immediately one runs into difficulty. It becomes obvious that learning theorists do not agree what motivation is or how it is accomplished. Generally speaking, you find these premises:

a. The learner must be self-motivated.

b. The trainer must motivate the learner through an effective learning climate.

c. We do not know enough about causes of motivation to discuss its role in the learning process.

Most training directors believe there is a factor called motivation. They seem to be evenly split as to whether the learner must be self-motivated or whether the training situation or trainer motivates the learner. Those who believe that learning must be self-motivated usually believe the trainer must provide the conditions under which self-motivation can occur. In practice, there is little to distinguish the training designs of trainers who subscribe to differing philosophies. Designed conditions under which self-motivation can occur look very much like the designs of those who attempt to motivate learners.

As the training director explores learning theory, he is confronted with another discouraging task. If anything is in print discussing, in layman terms, individual or comparative learning theories we have not found it.

Learning theories are to be found in courses in educational psychology and require a strong background in psychology, research, and statistics to understand them. Some of the differ-

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ences seem to a training director to be very subtle. It is extremely discouraging to attempt to understand either the individual theories or the difference between the schools embracing several theories.

**Animal Experiments Valid?**

The first thing that strikes the training director is that most of the research on learning theory has been accomplished using animals and fowls for subjects. Several authors comment that at least 95

per cent of learning research has been accomplished on data received from experiments on rats, chickens, pigeons, monkeys, dogs, and cats.

It is also interesting to note that research on animals and fowls inevitably occurs under one or both of two conditions: the animal or fowl is very hungry or sex is deprived. It may very well be that training directors have been overlooking some excellent motivational factors in this area.

Two other immediate problems present themselves. First, it is often difficult to distinguish learning theories differentiated as to general schools. Second, it is even more difficult to distinguish between individual learning theories within the general schools.

This difficulty is compounded because of the technical language and equations used to express the theories or portions of the theories. Usually aspects of the theories are stated mathematically and then expressed in prose. Neither of these are done in such a way that a training director can easily comprehend them. He is then faced with the problem of trying to determine what the technical language expresses and restating them in words he can understand.

**Learning Theory Schools**

Generally, learning theories seem to fall into six general schools.

The first school is known as the *Behaviorist School*. Primarily, these theories hold that learning results from the rewards or punishment that follows a response to a stimulus. These are the so-called S-R Theories.

E.L. Thorndike was one of the early researchers into learning. Generally he held that learning was a trial-and-error process. When faced with the need to respond appropriately to a stimulus, the learner tries any and all of his response patterns. If by chance one works, then that one tends to be repeated and the others neglected. From his research he developed certain laws to further explain the learning process — for example, the Law of Effect: if a connection between a stimulus and response is satisfying to the organism, its strength is increased — if unsatisfying, its strength is reduced.

E.R. Guthrie basically accepted Thorndike's theory, but did not accept the Law of Effect. He came up with an "S-R Contiguity Theory" of learning. His position was that the moment a stimulus was connected to a response — the stimulus would thereafter tend to elicit that response. Repeating the connection would not strengthen

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the association. Thus, if I am learning a poem and learn it sitting down, I can probably recall that poem best when sitting rather than standing. Generally he did not attach much significance to reward and punishment — responses will tend to be repeated simply because they were the last ones made to a stimulus.

Clark Hull introduced a new concept — not only was a stimulus and response present in learning — but the *organism* itself could not be overlooked. The response to a stimulus must take into account the organism and what it is thinking, needing, and feeling at the moment. We now had the S-O-R concept.

B.F. Skinner is usually identified with the Behaviorist School. Rather than construct a theory of learning, he seems to believe that by observation and objective reporting we can discover how organisms learn without the need of a construct to explain the process.

He depends heavily upon what is

called operant conditioning. He makes a distinction between "Respondent" and "Operant" behavior. Respondent behavior is that behavior caused by a known stimulus — operant behavior is that behavior for which we cannot see or identify a stimulus, though one may, and probably does, exist.

If we can anticipate an operant behavior, and introduce a stimulus when it is evidenced, we can provide the occasion for the behavior by introducing the stimulus — but the stimulus does not necessarily evoke the behavior. Thus the emphasis in learning is on correlating a response with reinforcement. This is at the heart of programmed instruction — a correct response is reinforced.

Other researchers have developed variations of the theories described above. Some assume that the organism is relatively passive but that the response is in the repertoire of the learner. Other theorists pay particular attention to instrumental conditioning. They assume that the organism acts on

his environment and that the response may not be in his repertoire.

Still others talk about mediating responses in which a period of time may elapse between the stimulus and the response — or the response may be a series of responses that stretch over a period of time. For example, a man may be desirous of marrying a girl but will work for 10 years to save enough money to support her adequately before proposing.

### Gestalt School

The second grouping is the *Gestalt School*. These theorists believe that learning is not a simple matter of stimulus and response. They hold that learning is cognitive and involves the whole personality. To them, learning is infinitely more complex than the S-R Theories would indicate.

For example, they note that learning may occur simply by thinking about a problem. Kurt Lewin, Wolfgang Kohler, E.C. Tolman and Max Wertheimer are typical theorists in this school. They reject the theory that learning occurs by the building up, bit by bit, of established S-R connections. They look at the phenomenon of insight, long-coming or instantaneous. To them, "the whole is more than the sum of its parts."

"Central in Gestalt theory is the Law of 'Pragnanz' which indicates the direction of events. According to this law, the psychological organization of the individual tends to move always in one direction, always toward the good Gestalt, an organization of the whole which is regular, simple, and stable.<sup>2</sup>

"The Law of 'Pragnanz' is further a law of equilibrium. According to it, the learning process might be presented as follows: The individual is in a state of equilibrium, of 'good' Gestalt. He is confronted by a learning situation. Tensions develop and disequilibrium results. The individual thus moves away from equilibrium but at the same time he strives to move back to equilibrium. In order to assist this movement back to the regular, simple, stable state, the learning situation should be struc-



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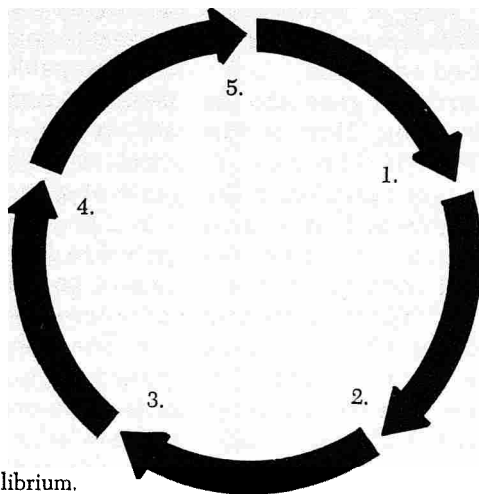
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Figure 1.3

Equilibrium

1. The learning situation is presented to the individual.
2. He moves away from equilibrium.
3. But attempts to move back to equilibrium.
4. He organizes the new material in an effort to integrate and systematize it.
5. He moves to equilibrium.



tured so as to possess good organization (e.g., simple parts should be presented first; these should lead in an orderly fashion to more difficult parts). The diagram in Figure 1 represents the movement toward equilibrium in the learning process."

A third school is the *Freudian School*. This is a difficult school to capsulize. "It is no simple task to extract a theory of learning from Freud's writings, for while he was interested in individual development and the kind of re-education that goes on in psychotherapy, the problems whose answers he tried to formulate were not those with which theorists in the field of learning have been chiefly concerned. Psychoanalytic theory is too complex and, at least at the present time, too little formalized for it to be presented as a set of propositions subject to experimental testing."<sup>4</sup>

A fourth school are the *Functionalists*. These seem to take parts of all the theories and view learning as a very complex phenomenon that is not explained by either the Gestalt or the Behavioral Theories. Some of the leaders in this school are John Dewey, J.R. Angell, and R. S. Woodworth. These men borrow from all the other schools and are sometimes referred to as "middle of the roaders."

A fifth-so-called school are those who subscribe to *Mathematical*

*Models*. To these researchers, learning theories must be stated in mathematical form. Some of these proponents come from different learning theory schools but tend to focus on mathematical models such as the Feedback Model, Information — Theory Model, Gaming Model, Differential Calculus Model, Stochastic Model, and the Statistical Association Model. As one tries to understand this school, it occurs to one that they seem to have no theory of their own but are expressing research findings of other theorists in mathematical terms.

A sixth school is more general in nature and can best be characterized by calling it *Current Learning Theory Schools*. These are quite difficult to classify and seem to run the range of modifying Gestalt Theories, modifying Behavioral Theories, accommodating two pieces of both theories, assuming that training involves the whole man — psychological, physiological, biological, and neurophysiological. Some of these are the Postulate System of Mac-Corquodale and Meehl and the Social Learning Theory of Rotter.

Some of the more exciting kinds of current research seem to be in the neurophysiological interpretations of learning. One example of this was shown on a national television program, "Way Out Men," February 13, 1965. In this research, flatworms are trained to

stay within a white path. If they deviate from the white path, they receive an electrical shock. After the flatworms learn to stay within the prescribed path, they are then chopped up and fed to a control group of worms. This control group learns to stay within the white path in about half the learning time. This has led some theorists to talk about the possibility of eventually feeding students "professorburgers."

Additional research is going on in this area and we have recently seen two or three other related pieces of research. It seems to indicate a key as to where memory and instincts are stored so that they can be transmitted to offspring.

One is intrigued by this research when one remembers popular beliefs such as "Eating of the Tree of Knowledge," eating fish is a good brain food, and the practice of cannibals eating the brain of an educated man to become smart or to eat the heart of a brave man to become courageous.

### Transfer of Learning

One of the problems that often confront a training director is the transfer of learning. Some of the major ways in which learning theories attempt to provide for the transfer of that which is learned to the work situation are the following:

1. *Actually doing the "that" which is being learned.* In this instance, we believe transfer is best when learning occurs on or in live situations. This is so because little or no transfer is needed — what is learned is directly applied. Instances employing this technique are on-the-job training, coaching, apprenticeship, and job experience.

2. *Doing something that is similar to that which is to be learned.* This transfer principle is applied when we use simulated experiences — the training experience and techniques are as similar to the job as possible. Sometimes we let the trainee discover the principles and apply them to his job. In other instances, particularly in skill training, he works on mock-ups which closely resemble

the actual equipment on which he will work. Other techniques employed would include role playing, sensitivity training, and case studies.

3. *Reading or hearing about that which is to be learned.* In this instance, the trainer or a book gives the trainee the principles and then discusses and illustrates them. The trainee must now figure out the ways in which he has heard or read applies to his job and how he can use it. Illustrative training techniques would be lectures, reading, and most management and supervisory training programs featuring the "telling" method.

4. *Doing or reading about anything on the assumption it will help anything to be learned.* In this instance there is an assumption that a liberalized education makes the trainee more effective in whatever job he occupies or task he is to learn. This might be termed the liberal arts approach. It assumes that a well-rounded, educated person is more effective, and more easily trained in specifics, if he

understands himself, his society, his world, and other disciplines. Obviously, this would be a somewhat costly way of training. It would involve perceptual living and generalized education.

Much research has gone into the transfer of learning. Most of this occurs in the S-R Theories. It seems to be less of a problem in the other major theories. This is quite understandable as one compares the theories of learning. For example, the S-R Theories become quite concerned with questions like "Will the study of mathematics help a person learn a foreign language easier and more quickly?" This has led to much research regarding the conditions under which the transfer of learning best occurs. It is also applicable to conceptual learning. For example, will learning how to delegate responsibilities to children be useful in the delegation process in the work organization?

#### Adult Learning

Recent research at the University of Nebraska indicated:

1. The average older adult in an adult education program is at least as intellectually able, and performs as well, as the average younger participant.
2. Adults who continue to participate in educative activity learn more effectively than similar adults who do not. This would simply seem to indicate that learning skills require practice to be maintained.
3. Adults learn far more effectively when they are permitted to learn at their own pace.<sup>5</sup>

The concerns about motivating individuals to learn, and the recognition that there is such a thing as a learning process, have led training directors and training psychologists to explore the condition under which learning seems best to occur. Numerous lists of conditions for learning exist. They vary depending on the learning theory school to which the author subscribes. However, there is a remarkable acceptance of some general conditions that should exist for effective learning regardless of the learning theory employed. One of these composite lists follows:<sup>6</sup>

1. *Acceptance that all human beings can learn.* The assumption, for example, that you "can't teach an old dog new tricks" is wrong. Few normal people at any age are probably incapable of learning. The tremendous surge in adult education and second careers after retirement attest to people's ability to learn at all ages.

2. *The individual must be motivated to learn.* This motivation should be related to the individual's drives.

a. The individual must be aware of the inadequacy of unsatisfactoriness of his present behavior, skill, or knowledge.

b. The individual must have a clear picture of the behavior which he is required to adopt.

3. *Learning is an active process, not passive.* It takes action and involvement by and of the individual with resource persons and the training group.

4. *Normally, the learner must have guidance.* Trial and error are too time-consuming. This is the process of feedback. The learner must have data on "how am I doing" if he is to correct improper performance before it becomes patternized.

5. *Appropriate materials for sequential learning must be provided:* cases; problems; discussion; reading. The trainer must possess a vast repertoire of training tools and materials and recognize the limitations and capacities of each. It is in this area that so many training directors get trapped by utilizing the latest training fads or gimmicks for inappropriate learning.

6. *Time must be provided to practice the learning;* to internalize; to give confidence. Too often trainers are under pressure to "pack the program" — to utilize every moment available to "tell them something." This is inefficient use of learning time. Part of the learning process requires sizable pieces of time for assimilation, testing, and acceptance.

7. *Learning methods, if possible, should be varied to avoid boredom.* It is assumed that the trainer will be sufficiently sophisticated to vary the methods according to

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their usefulness to the material being learned. Where several methods are about equally useful, variety should be introduced to offset factors of fatigue and boredom.

8. *The learner must secure satisfaction from the learning.* This is the old story of "you can lead a horse to water . . ." Learners are capable of excellent learning under the most trying of conditions if the learning is satisfying to one or more of their needs. Conversely, the best appointed of learning facilities and trainee comfort can fail if the program is not seen as useful by the learner.

9. *The learner must get reinforcement of the correct behavior.* B.F. Skinner and the Behaviorists have much to say on this score. Usually learners need fairly immediate reinforcement. Few learners can wait for months for correct behavior to be rewarded. However, there may well be long-range rewards and lesser-intermediate rewards. We would also emphasize that rewarded job performance when the learner returns from the training program must be consistent with the learning program rewards.

10. *Standards of performance should be set for the learner.* Set goals for achievement. While learning is quite individual, and it is recognized that learners will advance at differing paces, most learners like to have benchmarks by which to judge their progress.

11. *A recognition that there are different levels of learning and that these take different times and methods.* Learning to memorize a simple poem is entirely different from learning long-range planning. There are, at least, four identifiable levels of learning, each requiring different timing, methods, involvement, techniques, and learning theory.

At the simplest level we have the skills of motor responses, memorization, and simple conditioning. Next, we have the adaptation level where we are gaining knowledge or adapting to a simple environment. Learning to operate an electric typewriter after using a manual typewriter is an example.

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Third is the complex level, utilized when we train in interpersonal understandings and skill, look for principles in complex practices and actions, or try to find integrated meaning in the operation of seemingly isolated parts.

At the most complex level we deal with the values of individuals and groups. This is a most subtle, time-consuming, and sophisticated training endeavor. Few work organizations have training programs with value change of long-standing, cultural or ethnic values as their specific goal. Many work organizations, however, do have training programs aimed at changing less entrenched values.

The reader will recognize that this listing of conditions under which people learn contains concepts and principles from most of the learning theory schools. Most training directors are generalists, and seldom do their training programs focus on a constant single-objective outcome. It is perhaps

inevitable that his own guiding training concepts and principles will be a meld from many theories. It is important, however, that he understand the theories of learning so that he is using those concepts and principles which can best assure he will accomplish his organization's training objectives in specific training programs.

## PART II

As the training director explores learning theory, he finds the following points of view:

a. There are individual exponents of a given theory who insist that their theory alone accounts for the way people learn.

b. There are those who insist that we do not know what learning theory is and that learning theorists do not contribute to the real problems of training.

c. There are those who will be frank in saying to a training director, "You are heavily on your own. Learning theory in its present state will not materially help you. Experiment. If it works and gets you the results you want — don't worry about what learning theory lies behind your success."

It is encouraging to note that some social scientists are aware of this breach between research and practice:

"... Knowledge is not practice and practice is not knowledge. The improvement of one does not lead automatically to the improvement of the other. Each can work fruitfully for the advancement of the other but also, unfortunately, each can develop separately from the other and hence stuntedly in relation to the other."<sup>7</sup>

"It should be clear that the linking of social theory to social practice, as well as the development of a practice-linked theory of the application of social science knowledge to practice, is an intellectual challenge of the first magnitude. But it is one that many social scientists — particularly those who rarely leave the university system — have neglected."<sup>8</sup>

"Lewin is credited with remarking that one can bridge the gap

between theory and reality only if one can tolerate 'constant intense tension.' Roethlisberger and his colleagues described these tensions all too well for the person trying to improve the practice of administration when they wrote on 'Training for a Multidimensional World'<sup>9</sup> which I have already recommended to anyone seriously planning to enter this field."<sup>10</sup>

In relating learning theory to learning goals, learning theory corollaries, and the designed learning experience or training program, Figure 2 provides a model that is useful in visualizing their interrelationship and their time sequence. Two points are critical regarding the model in Figure 2:

a. The model describes either a single training program or a series of training programs separated by a span of months or even years.

b. The dashed lines indicate that the process is not a single revolution — but a continuous process. In the life of a single training program, the learning goals may be modified — or the design, learning corollaries, or even the learning theory employed may undergo on-the-scene modification if they are not producing the desired learning goals.

The model does not exist in a vacuum, nor is the choice of its component parts a matter of whim, preference, or intellectual selection. It is always related to the forces within the organization, the trainees, the trainers, and the situation, as is indicated in Figure 3.

A simplified mathematical statement of this model is:

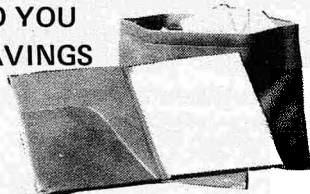
$$\text{LEARNING GOAL}(s) = \text{Present state of the organization} + \text{present state of trainees} + \text{recognized need for change}$$

Appropriate learning theory + appropriate training design + supportive climate for changed trainee behavior

If we accept (1) that effective training always takes into account the major forces impinging upon it and (2) that trainees have insights into factors that facilitate their learning, then it follows that we

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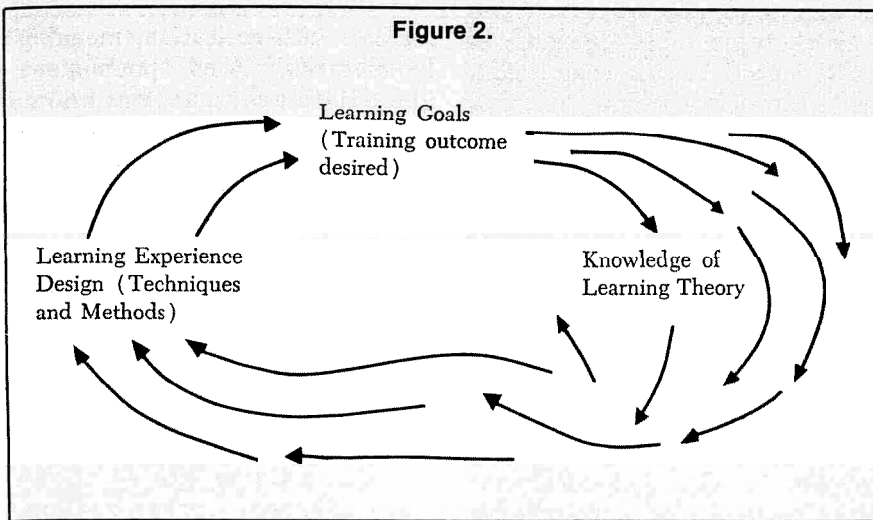
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Figure 2.



should listen attentively to trainee observations. Some of the more frequently mentioned are:

a. Participants almost always rate very high, as a training benefit, their interactions with each other. This seems particularly true in heterogeneous groups. They comment that they have become aware that their problems are not peculiar; it has been helpful to learn about other programs; they have learned from each other; and they have become more perceptive and broadened in the understanding of their role. We have, in the past, looked upon this as a minor side benefit of heterogeneous training. We are not inclined to believe this may be one of the major benefits of such training.

b. Participants always complain that they need time to internalize, digest, reflect, and to be left alone. We usually answer by scheduling more night meetings. Perhaps we need to experiment with two hours of training and six hours of internalization.

c. Participants like "bull sessions."

d. Participants say they need more recreation to release some of their emotional and physical energy.

e. The use of dyad conversations seem useful — even if these are forced. They seem to serve a helpful purpose of reaction, clarification, and feedback.

f. Time for reading pertinent articles and books seems to have excellent payoff. Training directors generally feel that managers would not accept training time being used for reading purposes.

g. Some limited experimentation seems to indicate that it is desirable to attempt to bring all participants up to a minimum level of knowledge before placing them in a training program. This can be accomplished by preliminary reading or programmed instruction.

### No Single Theory

We are inclined to think that by listening to the comments of participants as to what *they* believe enhances their learning, and designing training programs to meet these expressed needs, might have very excellent payoff in training programs even if the training director could not find support for the technique within existing learning theories. What we suspect is that there is no *single* learning theory that should be embraced by a training director or a training program.

This feeling seems to be support-

ed as one surveys the current trends in training programs. These trends would seem to borrow from most of the Schools of Learning Theory. To illustrate, the authors believe that the following trends can be identified:

1. A trend toward a focus on *improved performances* rather than on increased individual knowledge.
2. A trend to *train situations* rather than individuals.
3. A trend to see training as the *way management gets its job done* rather than a function of the training department.

4. A trend toward building up *in-house* capabilities rather than dependence on outside experts.

5. A trend toward insistence on *evaluation* of training rather than accepting it on faith.

6. A trend toward designing learning that will focus on *learning-how-to-learn*.

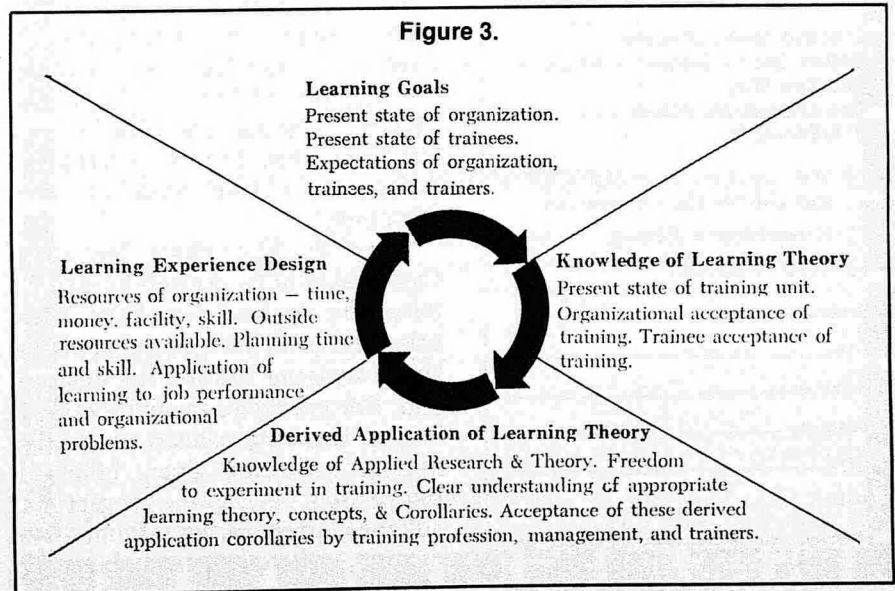
7. A trend toward training that is *reality-based* as against training that is highly unrelated to the learners' life experience.

8. A trend toward training that has an *action-learning* base rather than based on one-way communication.

9. A trend toward training that provides *reinforcement* and follow-up experience for trainees rather than "graduating" them from a training program.

10. A trend to depend more on the learning to be *self-motivated by the learner* rather than imposed on the learner by the trainers.

Figure 3.



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11. A trend for training to be *goal-oriented* rather than vague assurance that it will be "good for you."

12. A trend toward greater *homogeneity* in the persons being trained.<sup>11</sup>

### Fitting Specific Needs

There would appear to be different learning techniques and conditions that are applicable to different kinds of training and learning. The training programs within a work organization are not all aimed at the same kind of learning. Perhaps different learning theories apply according to the nature of the subject to be taught and learned, the nature of the organization, the nature of the trainees, and the available teaching resources. This would indicate that no single learning theory can be applied across-the-board to all learning activities.

We suggest the following format as one that would be useful to a training director:

*Step 1:* What is the learning outcome desired? This will indicate what is to be taught — orientation, problem solving, decision making, knowledge, memorization, changed attitude, changed behavior, manual skill, creativity, self-insight, lessened resistance to change, person-to-person relationships, group-to-group relationships, technical knowledge, communication, self-development, executive development, or understanding principles and theory.

*Step 2:* Based on what is to be taught, select the learning theory most applicable to that content; i.e., Behavioral Theory, Cognitive Theory, Functionalism, Mathematical Model, Psychiatric, Neurophysiological, or total man and environment.

*Step 3:* The basic learning theory should be utilized by examining the derived Corollary Theories and principles useful in effectively training toward the desired end. For example: knowing others better, knowing related programs better, reflection time, informal interaction, exercise, recreation, advance preparation, immediate reward, delayed reward, learning plateau, practice-rest-practice,

reading with recitation, meaningful material, "A-na" phenomena, immediate use, material known previously, important material, pleasant material, concept formation, concrete concept, part-whole versus whole-part, positive instances versus negative instances, general to specific, maturation task relatedness, fatigue factor, and motivation.

*Step 4:* These considerations would then suggest specific decisions on the following factors:

a. The learning site — on-the-job; classroom - organizational premises; classroom-off organizational premises; university or other formal site, cultural island, or home.

b. The grouping. (1) Related to size — one, dyad, trio, groups 5-8, groups 9-15, groups 16-30, and audience style — any number. (2) Related to relationships of participants — all male, all female, mixed sex; little experience, much experience, mixed experience; old, young, mixed age groups; known to each other, not known to each other; same organization — vertical, horizontal, diagonal; other organization — homogeneous, mixed; same educational level, mixed educational level; and same task or mixed tasks.

c. The learning methods to be employed — lecture, panel, symposium, debate, laboratory, programmed instruction, experience, coaching, job progression, job rotation, job enlargement, apprenticeship, situational training, personal reading, correspondence, liberal arts, formal school, formal outside program, workshop, conference, institute, seminar, visitation, or discussion groups.

d. The training aids to be used — movies, instantaneous replay movies, telephone — loudspeaker, TV, role play, exercises, in-basket, gaming, film strips, slides — transparent, tape recorder, blackboard, newsprint easel, flannel board, magnetic board, self-administered instruments, tests and quizzes, case studies — no printed discussion, case studies — printed discussion, case studies — incident process, experiments, models — mockups, and group — generated



data.

e. The type of resource persons or instructors — written material, experience, instrumentation, self, organizational technical expert, outside technical expert, organizational resource people, professors, industrial resource people, training department, supervisor, or peers.

f. How much attention needs to be paid to transfer of learning: direct transfer; live, simulated reality; principle to be applied; no direct application; known stimuli — opposite response; familiar to be used in unfamiliar way; or principle to be learned and applied.

### Change on the Job

As training directors, we strive very hard to establish response patterns that hopefully will be carried over and continued in the work situation. This is at the heart of one of the criticisms managers level at training programs — the behavior of participants back in the work situation too often seems relatively unchanged.

As one examines this phenomena, one is struck that most training programs in the conceptual areas of supervision and management lean very heavily upon Theory "Y" assumptions. We do not know of any programs that pointedly train toward Theory "X" assumptions. Conversely, organizations still have a goodly amount of Theory "X" assumptions underlying both their operations and supervisory and management practices.<sup>12</sup>

This raises two questions:

1. In our zeal to get away from the mechanistic approach to organizational dynamics, we have underplayed the role of these factors in the total organization as they affect training outcomes. We have tended to train as if such realities did not exist and that the only dynamics that were operable were the human factors in the training. This has created a breach between the training office, the operating people, and management.

2. The S-R phenomenon not only operates within the training situation but is very much operable within the work situation. People react in the direction of the rewards



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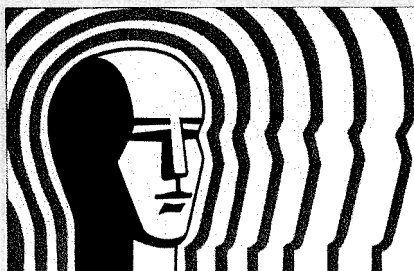
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they receive. The S-R patterns initiated in a training session have very little chance of survival when they come up against different S-R patterns of rewards in the work situation. For example, among the work situation S-R patterns rewarded are the following:

"Research paper production gets you promoted — not supervisory ability or a skill."

"Promotions depend on who you know — not what you know."

"I don't give a damn how your people feel — we've got a job to do."

"OK, you've been to a training program. Say something new."

"Seniority is what really counts around this place."

### Reward Patterns

If a S-R pattern, initiated in a training program, is to be maintained in the work situation, then it must be rewarded by the organization. If the pattern is in conflict with rewarded patterns, the newly-learned patterns do not have much chance to survive. We believe that this accounts for a great deal of supposedly poor results of training. The training is not in harmony with the reward patterns of the organization. As training directors, we would have much better success if we would train according to the pattern rewarded, and apparently desired by the organization.

The research into learning theory has indicated a need that has not been recognized fully by the training profession. We are amazed that a critically needed overview of the field of learning theory has not been written to assist the training director.

We need an identification of the existing learning theories that appear to be best researched and validated, the statement and comparison of these theories in language that the training director can comprehend and understand, and suggested guidelines for ways in which the training director can utilize these learning theories to the enhancement of his training activities.

We believe such a publication is long overdue and would be highly welcomed by almost all training

directors. We believe it would add much to the professionalization of the training job. More importantly it would very well make our training programs more effective in meeting the needs of our organizations.

### Helpful Guidelines

Beyond the implications for training directors that this exploration into learning theory has suggested, there seems to be some guidelines from such an exploration that are useful to a manager:

1. The sophistication needed to understand and utilize the implications of learning theory have much to say about the kinds of qualifications and skills a training director should bring to the job. The naive assumption that the bestowal of title and salary makes one a training director is tragic.

Similarly, the managerial assumption that an employee who has the knack of making cute speeches or who once taught elementary school is training director material is inadequate. We would even go further and suggest there are some questionable implications of taking an employee who never managed even a small subunit and entrusting him with the training of other managers.

2. We have already commented on why we believe much of our training is not effective. Operational and organizational climate must support the training received. In addition, managers need to be much more realistic and expect that very few entrenched S-R responses can be changed in a week's training program.

3. We need to relook at the anxiety about evaluation of training. We are not even sure how people learn and this creates real problems in trying to evaluate the effectiveness of our learning process efforts. We know people do learn but we are not sure why.

When one looks at the tremendous number of complicated, tenuous, and conceptual ideas that are discussed within the span of one week in the average supervisory or management training program, it seems naive in the least to expect that very much by way of established new patterns of behav-



ior could possibly emerge. The expectations of management are too high, and we as training directors have promised too much.

### Enchantment of Theory

We see no other trap. As we become concerned with learning theory, we must expect to find conflicting theories and conflicting practices within the profession. We must keep our focus on our objectives and not become seduced by enchantment with the theories.

"Theories . . . attempt to organize existing knowledge, they attempt to provide guiding threads or hypotheses toward new knowledge, and they may also furnish principles by which what is known can be used. This practical out-

come is seldom central in the thinking of the constructor of theory, and it is not surprising, therefore, that the person seeking advice from the learning theorist often comes away disappointed.

". . . It turns out, however, that many of the quarrels of the theorists are internal ones, not very important in relation to immediate practical problems; there are, in fact, a great many practically important experimental relationships upon which the theorists are in substantial agreement . . . if the theoretical differences are irreconcilable, and one position eventually wins out over the other, there will ultimately be an effect upon practice. But advice for practical peo-

ple today need not wait for the resolution of these theoretical controversies."<sup>13</sup>

This, then, is the challenge to those of us desiring to meet the critical problem of developing effective training programs to meet the changing manpower needs of today's organizations.

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For biographical background on Gordon L. Lippitt and Leslie E. This, please refer to page 25.