Selected Alternative Training Techniques in HRD

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Over the years a number of training techniques and procedures have been developed that are not part of the mainstream but are believed by some to have utility for organizations trying to enhance human performance. This article discusses five of these alternative techniques—subliminal self-help, mental imagery and practice, meditation, and Neuro-linguistic Programming (NLP)—and evaluates the contributions of each from a scientific perspective. With the exception of mental practice, there is a paucity of data to demonstrate conclusively whether these alternative techniques promote or enhance individual or organizational effectiveness. It is concluded that effective professional practice depends on scientifically derived research results.

Training and development have historically been plagued by charlatans hawking this or that program or approach achieving a significant positive impact on profits, effectiveness, absenteeism, turnover, and so on. Fads and techniques that come and go abound in this discipline; participation training is the style for a few years, then total quality management training surfaces; management by objectives comes and goes. Techniques featured in training courses are popular for a time and then very popular one-minute managers take its turn in the spotlight. Although these approaches are generally considered mainstream, others that are not so popular are less traditional but have significant following for demonstrating their effectiveness.

As a class, the latter techniques are considered extraordinary; they are developed outside of mainstream science and are accompanied by extreme claims for high effectiveness (Austin and Miller, 1992). These claims are often

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based on a handful of testimonials or individual cases instead of controlled experimentation and peer review of results.

An analogous situation has developed in medicine as a wide range of techniques known collectively as alternative medicine have gained increased emphasis. Some of these techniques have been around for hundreds, even thousands, of years; others, such as biofeedback, for example, are modern techniques that have filled useful niches alongside orthodox medicine. It is estimated that a third of American adults spent some $13.7 billion in 1990 on CAM, including acupuncture, chiropractic, iridology, hypnotherapy, aromatherapy, Shattuck massage, music therapy, naturopathy, herbal medicine, and therapeutic applications of electromagnetic fields (Langone, 1996). In 1996 the National Institutes of Health (NIH) classified alternative medicine as an untested group of nonorthodox therapeutic practices that often have explanatory systems that do not follow conventional biomedical explanations. NIH even created an Office of Alternative Medicine to facilitate the evaluation of alternative medical treatments modalities in order to determine their effectiveness, educate the conventional scientific biomedical community in alternative medical treatment, and help integrate treatments into mainstream medical practice.

Although no governmental office has been established to investigate alternative performance enhancement practices in business and industry, this paper reviews the validity and potential effectiveness of several alternative training and development performance enhancement techniques. The list is not meant to be exhaustive, but it represents a sample of currently popular techniques gleaned from management training and development literature (Druckman and Bjork, 1991). These techniques were deemed worthy of investigation by the National Research Council (Druckman and Bjork, 1991; Dweck and Swets, 1988) and were described as offering “the potential to accelerate learning, improve motor skills, alter mental states, reduce stress” (Druckman and Bjork, 1991, p. 811), among other positive claims. Following NIH’s definition of alternative medical practices, we classify these alternative training and development techniques as untested and nonorthodox. Individual or organizational performance enhancement practices, often with explanatory systems that do not follow conventional scientific explanations, are extensively reviewed in this paper.

The current article critically examines four popular techniques of this nature: subliminal self-help, mental practice, meditation, and Neurological Programming. As for subliminal self-help, it has been estimated that over two thousand companies produce subliminal materials and that they generate over $50 million in annual sales (‘Sound’, 1990). Regarding the use of mental practices, Driskell, Copper, and Moran (1994) and Wheatstone (1990) have noted that, though popularized in sports, mental practice is increasingly favored by business and other organizations. It has been stated that numerous organi-
Selected Alternative Training Techniques in HRD

These are the alternative training techniques, including USA Global Link and Telegroup, Inc. (Schmidt-Wilk, Alexander, and Swaim, 1999). And, in their book, O'Connor and Seymour (1990) list over eighty training organizations in the United States using Neuro-linguistic Programming. Together, these techniques represent some of the more popular alternative approaches to performance enhancement. It is not unusual to talk with someone who uses one of these or knows of someone or some business that does.

The practitioners of these methods often make somnolent claims for their techniques, yet generally do not document controlled results to justify such claims. According to Bennis (1993), psychological self-help is big business, and many practitioners rush to market with exaggerated product claims. Sometimes they rationalize their actions by saying they "know" their interventions work because they have seen it.

Finally, these four were selected for study because they have been widely noted and sold to business, industry, and government (Druckman and Block, 1991), and have received considerable attention in the popular press.

Subliminal Self-Help Products

Build self-confidence! Lose weight! Reduce pain! Quit smoking! Speak effectively! Read faster! Improve memory! These are but a few of the subliminal programs available to assist individuals in improving some aspect of their lives. According to Oldenburg (1990), about two thousand individuals or companies in the United States and Canada produce subliminal self-help products with retail sales estimated at $50 million annually. The subliminal industry is significant and, by some accounts, getting bigger (McGurk, 1989; Natale, 1988; Oldenburg, 1990).

Subliminal is defined as below the threshold of consciousness. Typically, what happens in these messages are hidden visually—presented for about one-sixth of a second—in a videotape (Smith, 1993) or auditorily—average signal-to-noise ratios of 10 to 20 db—in an audiotape (Borden and Periss, 1984). The messages suggest improvement in a selected area. The premise underlying subliminal stimulation is that a person can effortlessly accomplish in a short time what others struggle but fail to do in a lifetime, hence making these mass-marketed tapes very attractive. For example, Gateway's 'Invisible' audiocassette advises: "Subliminal tapes work, so you don't have to. Simply play the tapes while you work, play, drive, read, exercise, relax, watch TV, or even as you sleep. No concentration is required for the tapes to be effective. They work whether you pay attention to them or not." (Druckman and Block, 1991, pp. 107-8).

Audiocassettes appear to be the most popular subliminal approach (Merideth and Sarker, 1992). Most of the commercially available subliminal audiotapes have a similar format. When the tapes are played, all that a listener consciously
perceives are background sounds, such as music or ocean waves with the occasional cricket or seagull. Although each company's tapes contain a unique mix of background sounds, different tapes produced by the same company are often indistinguishable. Presumably, what separates the many different tapes produced by each company are the embedded subliminal messages that are impossible for a listener to hear consciously in the context of the background. Do these tapes work? In a word, no. A comprehensive review of the subliminal self-help literature conducted by the Committee on Techniques for the Enhancement of Human Performance of the National Research Council (Druckman and Bjork, 1991) unequivocally concluded that there is neither theoretical foundation nor experimental evidence to support claims that subliminal self-help tapes enhance human performance. Remarkably, a number of studies are very clear in demonstrating the ineffectiveness of subliminal tapes in modifying a wide range of behaviors (Asdell, Mellett, and Williams, 1991; Greenwald, Springberg, Pruzans, and Estenziel, 1991; Mistletoe and Skanes, 1992; Russell, Rowe, and Semon, 1993).

These findings fly in the face of the positive testimonials given by individuals using the tapes, but there are several reasons to question the conviction that subliminal suggestions are in any way responsible for, or even play a part in, any self-perceived behavioral improvements. In the first place, by buying and using a subliminal self-help product, an individual demonstrates not only a desire for personal enhancement but also commitment to change his or her ways. The very act of taking such a commitment, of altering oneself into action, may be therapeutic in its own right, in much the same way that some people realize marked improvements in behavior after they register for, but before they receive, psychotherapy (Rachman and Wilson, 1980). For these and other reasons testimonials are not accepted evidence by any science (Starr, 1990).

A second, related reason that subliminal tapes may seem to have beneficial effects is due to the social psychological phenomenon of effort justification. Oftentimes, the harder we work at something, the more we like it (Perzyd, 1983). After spending money to buy a subliminal tape and using it daily for several weeks many people would be reluctant to admit to themselves or to others that they had wasted their money and time. They would instead be motivated to detect any sort of change in some aspect of their lives in order to rationalize their purchase (Carney and Ross, 1984).

A third reason for attributing positive effects to subliminal tapes relates to expectancy effects, as clearly demonstrated by Pruzans, Estenziel, and Greenwald (1980); see also Greenwald, Springberg, Pruzans, and Estenziel, 1991). These researchers recruited individuals through a newspaper advertisement soliciting volunteers who were especially interested in subliminal self-help tapes and those were likely to realize the people most likely to purchase such products. On the first day of the study, the participants completed tests measuring their self-esteem and memory ability. They were then given a commer-

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The intriguing aspect of this study was that only half of the individuals, selected randomly, actually got the tape they thought they were getting while one-quarter received the memory enhancement tape mislabeled as the one to improve self-esteem and one-quarter received the self-esteem tape mislabeled memory enhancement.

The participants took their tapes home and listened to them for five weeks, as recommended by the manufacturer, and then returned to the experimenters who once again tested their self-esteem and memory. Although no differences were found—either positive or negative—on any measure of self-esteem or memory, many study participants believed and reported otherwise.

Approximately half of those who thought they had received the self-esteem tape, regardless of whether they had actually received it, stated that their self-esteem had risen; similarly, about half of those who presumed correctly or not that they had received the memory tape asserted that their memory had improved as a result of listening to it. The title of the Pawlak, Ekkenazi, and Greenwald (1980) investigation—"What you expect is what you believe, but not necessarily what you get"—seems fitting.

In summary, a critical review of additional self-help training clearly demonstrates that this alternative technique to enhance human performance is not effective.

Mental Practice

A second alternative training and development technique is mental practice. Mental practice refers to cognitive rehearsal of a task in the absence of overt physical movement. When a musician practices a passage by thinking it through or when an athlete prepares for an event by visualizing the steps required to perform the task successfully, he or she is engaging in mental practice. Establishing provided the standard definition of mental practice as "the symbolic rehearsal of a physical activity in the absence of any gross muscular movements" (p. 795). Such techniques also have been called imaginary practice (Perry, 1970), covert rehearsal (Coehn, 1967), symbolic rehearsal (Sackett, 1934), and introspective rehearsal or conceptualization (Egstrom, 1964).

In these studies, individuals are typically instructed to sit quietly, not move, and see themselves performing the task successfully from start to finish. Usually a control (no practice) group is included, as well as a group that actually practices the task physically. After a given period following the mental practice or physical practice session, mental performance is assessed. If the performance of the mental practice subjects exceeds that of the control subjects, mental practice is said to have a positive effect on enhancing performance.

Does mental practice really enhance performance? An excellent study by Driskell, Cooper, and Moran (1984) addressed this question. These researchers conducted a comprehensive analysis of the literature on mental
practice to determine the effect of mental practice on performance and identify conditions under which it is most effective. Results indicated that it has a positive moderate but significant effect on performance, and that its effectiveness is a function of the type of task, the retention interval between practice and performance, and the length or duration of the mental practice intervention.

More specifically, Driskell, Copper, and Moran found that mental practice is an effective means for enhancing performance. However, the data indicated that mental practice is less effective than overt physical practice. The authors suggested that this finding is not altogether surprising given what mental practice provides and what it does not. Mental practice offers the opportunity to rehearse behaviors and to code behaviors into easily remembered words and images to aid recall. Mental practice does not offer direct knowledge of results or visual and tactile feedback. Statistically, mental practice accounted for less than 7 percent of the variance in performance. Though this may not sound like much, how much of us would be thrilled with an increase in profits of nearly 7 percent? It might mean the difference between keeping a job or being asked to move on.

Second, Driskell, Copper, and Moran found that type of task is a significant moderator of the effectiveness of mental practice. Not surprisingly, the effect of mental practice on performance is stronger the more the task involves cognitive elements (for example, observing, reading, problem solving) as opposed to physical elements (counting force, applying speed of power, maintaining balance). But even though mental practice is better suited to tasks that are cognitively laden, it can produce significant effects in a wide range of tasks, from determining volumetric analyses of chemical substances (Beasley, 1978) to welding (Haddad, 1971).

Third, the positive effect of mental practice on performance declines over time. Driskell, Copper, and Moran found that after approximately two weeks the beneficial effects of mental practice are reduced to one-half of their original magnitude, and after approximately three weeks the increase in performance due to mental practice substantially dissipates. These estimates provide practical guidelines for implementing mental practice to gain maximum benefits of mental practice, and some interviewees found that mental practice, for example, mind went to another place, was a way of getting away from the stresses of everyday life.

Fourth, these researchers found that experienced people benefited equally well from mental practice, regardless of task type. Novice subjects benefited more from mental practice on cognitive tasks than on physical tasks. This result is consistent with Ryan and Simons' (1983) argument that if an experienced individual has already learned the component motor skills of a physical task, then mental practice may be sufficient to enhance performance without additional physical practice and feedback. But for novices, who have not formed an approximation of the skill, the symbolic rehearsal provided by mental practice...
may not be sufficient to guide performance. This suggests that mental practice may be more effective, everything else held constant, if novice subjects are given schematic knowledge before mental practice of a physical task.

Finally, Driskell, Cooper, and Moran (1994) established that more mental practice is not necessarily better. They suggested that approximately twenty minutes of mental practice may be an optimal mental practice intervention. This is consistent with many researchers who have held that extended mental practice may lead to a loss of concentration and that there is an optimal length for such interventions. For example, Gohia (1972, p. 108) argued that “relatively short” practice sessions are optimal.

In summary, it appears that mental practice is a moderately effective means for enhancing performance in some circumstances, though it is less effective than physical practice for some people. Thus, for dangerous tasks, tasks in which there are seldom opportunities for physical practice, or as a means of supplementing normal training, mental practice should be considered as a training alternative.

Meditation

A third technique is meditation. Although for many people meditation conjures up visions of gurus atop mountaintops, it has been scientifically defined as a class of techniques designed to influence an individual’s consciousness through the regulation of attention (Druckman and Bjord, 1991). Meditation typically requires that people lie quietly or sit in a particular position; attend to their breathing; adopt a passive attitude; be at ease; and, frequently, repeat aloud or to themselves a monosyllabic word, phrase, or sound, referred to as a mantra, typically for twenty minutes a day, once a day, morning and evening.

Usually, meditation is viewed as a relaxation technique that can be used to cope with existing stress or prevent stress from occurring. But it can function in other ways. The popularity of meditation is a relatively recent phenomenon in the United States, although forms of meditation have been practiced in many Eastern countries for centuries. Meditation is an altered state of consciousness in which the individual may try to increase awareness and achieve bodily relaxation as well as relaxation of the mind (Benjamin, Hopkins, and Nation, 1994). Most types of meditation can be placed in one of two classes. Opening-up meditation requires the subject to achieve a clear mind by eliminating all thoughts and thus becoming especially receptive to new experiences. In concentrative meditation, the person focuses attention intensely on a single sound, idea, object, or action of the body, such as breathing (Nanhojo and Ornstein, 1977).

Meditation originated in religious settings. Meditation and contemplation in the Jewish tradition allowed the concentration necessary for reading and
interpreting the Tanpau. This practice also runs through Indian religious history as far back as the third millennium B.C. (Bloomfield and Kory, 1976). One meditation technique, Transcendental Meditation (TM), was introduced to the United States in 1959 by the Indian teacher Maharishi Mahesh Yogi. It is by far the best known and most often practiced of the various approaches to meditaion. Maharishi chose to use the term "transcendental," meaning "going beyond," to signify that TM takes one beyond normal wakeful experience to a state of oneness that is also characterized by a heightened sense of delight (Adlai, 1979).

TM creates an opportunity to disengage briefly from the unsettling cascade of thoughts, emotions, sensations, and perceptions. The meditator experiences quite levels of the mind while becoming increasingly aware of the unbounded nature of this awareness in the absence of object. This real offers the opportunity for a variety of spontaneous and regenerative changes throughout the entire nervous system. (Deniston and McWilliams, 1975)

A number of claims have been made for the benefits of meditation, including elimination of depression and anxiety, greater resistance to fatigue, improved sexual potency, greater creativity, stronger social skills, and better mental efficiency. More relevant to business, meditation advocates (for example, Gordon, 1971; Kory, 1976; Schmidt-Ahelle, Alexander, and Bostain, 1976) claim that executives and employees work together more effectively and accomplish greater productivity after commencing meditation, that productivity and sales dollar-per-person almost double, and that some organizations have indicated that meditation programs generated so much enthusiasm that additional courses were opened to all executives and employees. Nice to say, wonderful to hear, but such assertions and testimonials are not scientifically rigorous and do not warrant confidence.

The problem, from a scientific perspective, concerns proper experimental controls. Controls for distraction or for just sitting or lying quietly and undisturbed are seldom found in the studies that demonstrate such positive benefits as reduction in respiration and heart rate and in experience of stress, anxiety, or anger (Cheaper and Giber, 1976; Delmonico, 1985). Indeed, when a resting-only control group is present, there is no evidence that reductions in heart rate, respiration rate, skin conductance fluctuations, or blood pressure are any less for the group than for experienced meditators (Holmes, 1985). In other words, resting in bed for twenty minutes produces the same reduction, in somatic arousal as a sitting in twenty minutes of meditation. There are also some reports of benefits in blood pressure reduction for borderline hypertensives (for example, Benson, 1975; Pard, 1973), but in most studies combined use of other techniques, such as relaxation, precludes clear attribution of any positive effects to meditation alone (Delmonico, 1981, as cited in Beiner and Connolly, 1985).

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any special properties of meditation but rather to these individuals' confidence in their ability to slow down their respiration rate as well as their faith that they can survive the ordeal if only they do not panic (Druckman and Bjork, 1991). Or the reports may simply be fraudulent, like the repeated claims of yogi levitation (Starr, 1989).

Finally, two reviews of meditation research (Brenner and Connolly, 1986; Druckman and Bjork, 1991) found that in scientifically controlled studies meditation does not reduce somatic arousal any more than does simply resting quietly. In summary then, it must be concluded that there is no scientific evidence to support the unique benefits attributed to meditation by its proponents, who appear to be more concerned with demonstrations of the experience than with experimental evaluations of the procedure.

Neurolinguistic Programming

"Double your chances of success: A powerful new psychological technique called NLP can help us get what we really want—and need—out of life" (Robert Harding Syndications, 1995, p. 69).

"Cure phobias and other unpleasant feelings responses in less than an hour... cure many physical problems—not only most of those recognized as "psychosomatic"" (Stevens, 1979, p. 11).

"The most powerful and effective technology in human communication and change" (brochure, Jacobson, 1996, no page numbers).

Extraordinary claims to be sure, but there are but a few of those being espoused for Neurolinguistic Programming (NLP), the final alternative training and development technique we will review in this article. NLP is a system of procedures that purports to enable people to increase their effectiveness in communicating with and influencing others. It was developed in the 1970s by Brandt and Grinder (for example, 1977; also Brandt and Grinder, 1979; Grinder and Brandt, 1976). Training in NLP is usually provided via workshop format; the third quote above is actually from a brochure advertising one such training opportunity.

NLP was derived through observations of three psychotherapists who Brandt and Grinder judged to be particularly effective and who formulated as a means of understanding and facilitating similarly high levels of interaction in others. NLP is founded on the idea that people communicate from a limited number of sensory-oriented representational systems. A representational system is a person's typical, usual, and preferred way of interacting with the world. Some people are visually oriented, others are sound oriented, and still others are feeling oriented. When a person uses language that ties into the representational system used by another, that person is supposed to feel more understood and, ultimately, to be more easily influenced. Examples include statements like "I see what you mean" when conversing with a visually oriented person, "It sounds to me like..." when communicating with a
hearing-oriented individuals, and I feel') we should... when speaking with a linguistically oriented person. Thus, each phrase uses a verb linked to one of the representational modalities. One can cut off the words and match the other's system with each reply or monitor the direction of eye movement, which is the most noteworthy nonverbal indication of an individual's preferred representational system.

Bandler and Grinder said that these eye movements are remarkably fixed and that certain directions consistently correspond to the three representational orientations, as well as to certain thought processes, information recall, or image construction. Though NLP training it is stated that individuals can gain proficiency in identifying representational modes and use both this knowledge and an understanding of thought processes to establish high levels of interpersonal congruency via language that mirrors others' modes, that is, using the same sensory terms. But more importantly, applying this information via specific techniques like "anchoring" and "reframing," it is said that a person also can readily and to a significant degree influence or direct another person's thoughts, feelings, and opinions.

Three questions should be asked of NLP. Is it based on knowledge of how the neurological and perceptual systems work? Do the proposed relationships among NLP variables exist? And does NLP produce the results it claims? In relating NLP to current understandings of neurology and perception, Druckman and Swets (1988) and others (Brodsky, 1987) believe NLP to be in error, not being grounded in contemporary, scientifically derived neurological theory. NLP is based on outdated metaphors of brain functioning and is based with numerous factual errors (Druckman and Swets, 1988).

Bandler and Grinder noted that they were not interested in establishing scientific validation of NLP but indeed intended to portray what works. Hence, the authors only present anecdotal and testimonial data to support their suppositions and the relationships among NLP variables and concepts. Even an elementary test of scientific method (for example, Stanovich, 1996) do not the myriad pitfalls of such methodology and describes its reliance on legitimate theory building. Where controlled studies have been performed attempting to test NLP hypotheses—like the proposed relationship between eye movement direction and representational modes—they consistently have failed to do so (for example, Blommaert, 1988). Bradley and Heinze-Joachim (1989) summarized that NLP is limited by a lack of supportive empirical evidence and is too opaque to account for verbal behavior adequately.

Finally, in meta-analyses and a follow-up investigation of controlled studies examining the effectiveness of NLP in influencing others, Sharply (1984, 1987) stated that matching representational systems to eye movements has no effect. Similarly, Druckman and Swets (1988), in their evaluation of NLP for the National Research Council, concluded "there is little or no evidence so date to support either NLP assumptions or NLP effectiveness" (p. 143). The most telling commentary on NLP may be that in the latest edition of his text on
enhancing human performance, Druckman (Druckman and Bjork, 1991) omitted all references to Neurolinguistic Programming.

Concluding Remarks

A key goal of HRD is to optimize individual, team, and organizational performance (Gillet and Eggland, 1989). To survive and prosper, organizations are interested in enhancement of human performance and are willing to pay handsome for a competitive advantage. This is reflected in the American Society for Training and Development's finding that employers in 1995 (most recently available figures) spent $5.5 billion on HRD activities in the United States, an increase of 20 percent (adjusted for inflation) over 1985 ("Briefs," 1990). With such funding available it is inevitable that a multitude of approaches will be offered to businesses. Some of these techniques have been and will continue to be developed outside of mainstream, scientific research contexts. And frequently these methods are accompanied by claims of extreme effectiveness.

We identified four alternative training techniques that have been widely tested and sold to government and industry: subliminal stimulation, mental practice, meditation, and NLP. Finding that the claims made for three of these techniques, mental practice being the exception, did not stand up to scientific scrutiny, we encourage HRD professionals to guard against substituting testimonial popularity in the marketplace for research evidence when they consider a new training aid. Effective, professional HRD practice depends on having and using objective research evidence to guide evaluation. One should question how practice, and the field of HRD, can advance when such training techniques are used if the research is not present.

As is the case with any product that comes with extraordinary claims, it is the buyer's responsibility to be skeptical and cautious when weighing the effectiveness of nontraditional training and development products. As we indicated, some products or techniques may be useful, if in limited contexts, while others may be of little value. The only way to discern which is which is by using the scientific method and relying on formal experimental methodology instead of the testimonials or marketing hype typically used by proponents of alternative training and development strategies.

References


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