Gouvernement du Canada Ministère des Communications

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QUEEN HD 5715 .D35 1990 Government of Canada Department of Communications

Le Centre canadien de recherche sur l'informatisation du travail Canadian Workplace Automation Research Centre

# TRAINING: THE BEST INVESTMENT

by

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HD 5715 D35e 1990

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DD 10312482 DL 124499185

No. cat. 28-1/63-1990E ISBN 0-662-18136-0

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## **RÉSUMÉ OF ARTICLE**

The increasingly rapid pace of technological changes in the workplace requires managers to consider training as an essential investment to be made rather than a cost to be born. Significant investment should be made in good training policies and programs. This raises the issue of how to evaluate training.

There are three major factors which determine the degree of success of any training. The first is the integration of training within a global planning framework which includes all human and organizational aspects involved. Otherwise fragmented ad hoc training will lead to severely limited impact. Secondly, training should be solidly rooted in real needs of participants. Multiple pedagogical approaches should be used in order to best accomodate the varied needs of all trainees. Finally, there should be a true follow-up of training to evaluate how successfully the training was transferred to the actual job. This evaluation process is not a one-shot deal but a continual, iterative process that serves to progressively fine tune the training programme. In this way, both job performance and the effect of training on this performance can be measured.

#### INTRODUCTION

Demographic projections point to a major shortage of trained and educated workers. We are increasing the skills of computers but not of their users! We risk ending up with offices filled with very competent, automated machines that are being operated by marginally skilled people. (Carr, 1988). Training is no longer a luxury. Today's workforce is younger, highly educated and upwardly mobile (Wehr, 1988). If an organization is committed to its employees, the employees will be more committed to the organization. Training is thus a good investment, one of the best you can make.

Training may be defined as " instruction geared toward developing a specific group of skills or task competencies." (Caplette, 1988). Training is therefore distinct from education since the former consists of transferring established knowledge and know-how while the latter seeks to impart critical understanding in the learner. For example, understanding how an internal combustion engine works with a view to designing a better one is an educational process, whereas learning how to maintain the engine in good working order is a training process. Training is usually based on the solid experience of practitioners of the skill (the correct or best way to do something). As such, training is essentially conservative in nature, serving to conserve the established practices.

As the world becomes increasingly more technical, more people with specialized education will be needed. New technology both creates and eliminates jobs while changing the requirements of others. There is a need for ongoing training due to the evolutionary nature of tasks. Training and retraining requirements should be constantly anticipated and training programs prepared or revised accordingly. Training should be replicable - it is not a one shot deal but an ongoing committment both on the part of the learner and the company. The objective of training is to improve performance on the job - therefore, training will always be cheaper than the alternative. (Helfgott, 1988).

Technostress is a modern disease of adaptation, caused by the inability to cope with new technologies in a healthy manner. Approximately 71% of all computer users are affected by this type of anxiety (McKee et al, 1986). There is a fundamental lack of knowledge in the office of today which will only grow more and more

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pronounced in the office of the future. The only "cure" for technostress is training. It is not only new employees or novice users that are prone but really all workers. There will always be new applications, infrequently used features, changes of all sorts that occur. Each wave of reorganization will trigger new training or retraining needs in the office (Kleinschrod, 1988).

## MAJOR TRAINING PROBLEMS

There are many training problems in evidence today. In fact, "training has been a problem for business since business began" (Ross, 1988). There is a major shortage of trained, skilled workers coupled with higher turnover rates in almost all industries. Training is costly in terms of time and money and is negatively perceived by both management and the workforce. There is very low impact of training on actual job performance. This is partly due to the difficulty in evaluating training and the difficulty in keeping training up to date.

The increasing complexity of industrial applications and controls challenges conventional training. Current knowledge and skills need to catch up with the technological advances in the workplace. While application complexity and training costs are both exponentially increasing curves, the level of current knowledge and skills is a flat, if not slightly decreasing line. With new technologies, training now more than ever can confer a competitive edge.

One of the first decision points is who to train and who should do the training. You can't train just part of the workforce as this will create "second class citizens" and lower morale (Helfgott, 1988). The problem is that those who need training the most are often those who don't obtain it. Those who are already among the best educated are usually selected for additional training. The best policy is an open-door one, with training available to all who wish to participate. In addition, mandatory enrollment procedures are needed to ensure that those who need the training for their jobs are scheduled automatically for all training sessions.

The next decision is to choose whether to use in-house trainers or hire someone from the outside. In general, it is more cost-effective and practical to use in-house training resources. The trainers will have a better understanding of the organizational climate and be better acquainted with trainee characteristics. At present, 80% of Fortune\_500 companies use their own personnel for training and only 20% contract out for training services (Kleinschod, 1988).

When to train and for how long? The solutions are fairly simple: as soon as possible and for as long as the trainee performs the task! Training suffers greatly from the "too little too late" syndrome. On average, trainees obtain 10 hours of training with rarely enough, if any, practice time included in this (Fletcher et al, 1988). The significant changes that are occurring in the workplace mean the acquisition of new skills which is often the key to gaining or retaining a good job. Retraining and re-education are becoming more and more necessary due to the diminishing half-life of skills and knowledge. Among today's employees who will be working by the year 2000, 75% will need retraining (Ross, 1988). Organizations can no longer afford to forget about training and hope that employees will somehow pick things up on the job.

Where to conduct the training? The choices are either on-site or off-site. In general, on-site training is more cost effective. Trainees can benefit from peer learning and support. They will spend less time and money travelling and concentrate more on the content to be learned. The context will tend to be a more realistic one as well. On the other hand, students will not feel detached enough from their jobs and responsibilities which may lead to a lower level of concentration and committment on their part (Helfgott, 1988). At present, 89% of Fortune 500 company courses are on-site and only 11% are conducted off-site (Kleinschrod, 1988).

The actual content of the training should be carefully planned in order to train the correct skills and maximize their transfer to actual contexts. Employees should receive holistic rather than reductionist training in order to ensure that the scope of the training is appropriate to meet the goals of the training. The overall system should be the target as opposed to a single, discrete task. For example, instead of teaching only five wordprocessing commands, training should also impart the troubleshooting skills necessary to find and correct errors to keep the whole system functioning and usable.

Training should be less technical and more practical. The focus should shift from technical features of the system or task to be learned and be more geared to

how users actually use the system, for what purpose, in order to maximize the process and products of doing that job. (McKee et al, 86). Trainees should receive content that covers all aspects of the system that contains the job or task at hand. The policies and procedures that affect the system should be incorporated in the training plan.

A more difficult problem to address is how the training should be carried out the delivery method and media of instruction. The method of delivering the instruction can range from instructor-dominated to trainee-dominated. Several factors influence who should dominate the training process, some of which are outlined in Figure 1. There is no single correct or best way to train. The recommended style will depend on the trainer and the subject matter as well as trainee characteristics. In general, adult learners will have high intrinsic motivation and a high maturity level. The content of job-related training tends to be activity-oriented, focused on long term results and consist of clearly defined tasks with an emphasis on processes. The trainee should therefore have the greatest say in how the training is to proceed. (Tindal and Doyle, 1987).

Adult learners do appear to have particular preferences for delivery of instruction. They favor single instructors who lecture an average of three hours with appropriate breaks. The maximum number of trainees should be maintained at about a dozen people. The more active the training was, the better it was perceived by participants. Small group work, case studies, role playing, and field trips were singled out as good training methods. Since there is no conclusive evidence to support the superiority of any given medium in imparting skills, it seems reasonable to be guided by the preferences of participants in the hopes of increasing their motivation (Harbour, 1988).

Traditional training centres around the production model. Courses are expected to have a uniform effect on learners. Trainees are transformed in that they acquire certain skills. Quantitative indicators are used to measure outputs such as number of students per class, number of positive evaluations by participants and number of hours of training. Teaching is thus an administrative process. This model is effective for repetitive and standardized tasks such as those found in assembly lines. The production model also works well for teaching formalized knowledge such as policies and procedures of an organization.

An alternative model of training is the service-oriented model. This model differs in its orientation, role and responsibilities. The focus is on the clients of training rather than the classroom or instructional events. This model is appropriate for dynamic, non standardized jobs since the goal is customization rather than standardization. Indicators include measures of client satisfaction, quality control. The method of training should thus be matched to the tasks trainees are expected to perform. (Caplette, 1988).





Finally, there are two major alternatives for training media: instructor-led vs. technology-based. Instructor-led training represents the traditional approach that is still widely used and widely accepted. This medium is appropriate for all types of training needs. Instructor-led training is dynamic and interactive as instructors can respond to any questions on the spot. There are limits to the extent to which differences in individual backgrounds and needs can be accomodated. There are also variations across different instructors and different classes. The development costs are low and the content is fairly easy to maintain and update. Another drawback is that the time and location of the training may not be convenient for all participants.

Technology-based training offers a number of alternatives to the traditional model. Computer-based training, interactive videodisks, teleconferencing, etc. are infiltrating company training courses. They offer some advantages, especially in terms of time and availability. They are literally available anywhere at any time. They better meet individual needs. They are highly interactive and require approximately 50% less of the trainees' time than instructor-led classes. Four to five hours of computer based training, for example, are approximately equivalent to a full day of instructor-led training. However, technology-based training appears better suited to intoductory content matter rather than advanced as they do require experienced authors to develop (Wehr, 1988)

The Omni Group Ltd. training survey of how large firms train personnel reveals that among Fortune 500 companies, 86% offer computer based training and 93% intend to do so within the year. While the delivery method of choice is clearly traditional methods such as instructor-led or self-training (refer to figure 2), videodisk and computer-based training systems show a definite foothold in training (Kleinschrod, 1988).

In summary then, the major problems of why to train, who to train, when and for how long, where, what and how to train represent a series of decisions to be made when planning the training in order to best meet all the training needs of employees. The importance of training as an organizational investment can no longer be contested. The question is not why but how to achieve the most impact with training. Changes in the workplace create, and will continue to create a constant demand to train adult learners on the job. The content of the training should include the entire system and not just the isolated skill to be acquired. Finally,

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a multitude of pedagogical strategies and educational technologies should be used in order to match the training to all trainees.





### Discussion

Classroom training is no longer sufficient to meet the increased complexity of the workplace. The amount of detail required is too great for retention of learning. Refreshers are needed on the spot. Training costs continue to increase at an exponential rate. How can training meet these challenges? First, ensure that it is truly a training problem. If training alternatives such as job aids can help oversee and support users so that they increase their competence, then avoid any unnecessary training.

If you can't avoid training, then one solution is to use state of the art technologies to make information, knowledge and expertise available to anytime, anywhere to anyone who needs it. Technology here is used in the larger sense of the word to denote any tool, whether it be an actual machine or a different conceptual approach to training.

Another route is to simplify the tools being used. For example, the learning curve associated with Macintosh applications is drastically lower than that on computers with non-iconic interfaces (Buckler, 1988). It is always possible to improve existing training with existing tools. However, the decision is much more complex than a simple choice of training media to use. One has to consider the trainee (experience, education, organizational status), the technology (type, complexity, applications), the task (characteristics, results, functions) and the organization (size, management style, goals).

The systems approach to training is one very good example of how educational technologies can contribute to improving the effectiveness of training. Training requires a global perspective. The training for a job or task should be integrated within the context of that job or task, and not viewed as a standalone type of behaviour. Some factors to consider in this holistic framework include the scope of the training, expected inputs and outputs to the training process, resources that are needed (time, instructors, materials, etc.), the goals of training and how their attainment will be evaluated and finally the approach to be taken for needs analysis and follow up of training (Frenette, 1988).

In training, the unit of analysis is usually a task, an individual or transactions between individuals. Yet solutions that result from these types of analyses do not seem to fit organizational problems. The unit of analysis should be expanded to include not only jobs, individuals and tasks but also larger systems such as organizational hierarchies, objectives, and societal environments. This holistic needs assessment will help training to address the gap between what is and what should be in order for training to be future-oriented rather than a means of optimizing the here and now way of doing things. (Kaufman and Sample, 1986).

Training should always be linked to real business needs. How do you reach this goal and how do you measure the results? A standard cost/benefit analysis will serve to calculate the return on training investment. Identify user needs, the training problems behind these needs and necessary knowledge and skills that are required for the job. A good way of doing this is to study the performance of very competent

performers ("experts"). Next, compare the training results expected to those obtained. Finally, calculate the costs involved in obtaining these results (Robinson and Robinson, 1989).

Ideally, the results of training should be maximally generalizable to the job (transfer of training) and the skills should be maintained for as long as that job is to be performed (retention of learning). The degree to which employees effectively apply the knowledge, skills and attitudes gained in a training context to the actual job context is a direct measure of the success of the training. Typically, only 10% of training is properly transferred. Figure 3 shows a model of the transfer process (Baldwin and Ford, 1988).

Some good ways to promote transfer of training include the buddy system where trainees are teamed up to reinforce one another, planned or unplanned booster sessions, teaching trainees relapse strategies so that they can diagnose and "cure" themselves and enhancing the motivation to learn in the first place. The measure of transfer is a good indication of the validity of the training program and it is the best way to evaluate the impact of training.

High technology tools offer new solutions to old training problems. They are particulary effective in training high technology skills. Computer-based training and distance education systems, such as tele- or videoconferencing systems, are well-suited to geographically dispersed populations or those in remote, inaccessible areas. Interactive videodisk instruction and artificial intelligence-based instructional systems offer the maximum degree of adaptability and are well-suited to autonomous learners with widely varying needs. Thus each system has both advantages and disadvantages associated with its use (Campbell, 1988; Kirrance and Kirrance, 1989).



Figure 3. A Model of Transfer of Training

Regardless of the type of training that is selected, "training is necessary, training must be ongoing and training problems are not going to go away." (Kleinschrod, 1988). Media should be integrated to offer the best of all possible training worlds rather than trying to select the "best" medium to use. The more channels there are, the better the training results will be. People retain 25% of what they hear, 45% of what they see and hear and 70% of what they see, hear and do (Reinhart, 1987). Thus the future of training is one of integrated training embedded in real user needs carried out concurrently with actual job performance and making use of advanced technologies, where appropriate, to decrease costs and increase the return on investment of training.

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