Designing Training and Development System

DCE 5231

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ABOUT YOUR INSTRUCTOR

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Dr. Abu Daud is the Director of the Institute for Distance Education and Learning (IDEAL), Universiti Putra Malaysia. He received his B. Agric. (Hons.) from the Universiti Malaya, M. S. and Ph. D. (Extension Education and Training Management) from the University of Maryland, College Park. Dr. Abu Daud has taught courses at the diploma, undergraduate and graduate levels at the Universiti Putra Malaysia for the past 15 years in the areas of adult education, training management, research methodology, extension education and program planning, and human resource development. Dr. Abu Daud has devoted his time in conducting research, consultancy and professional continuing education. He has published a number of articles, research reports, books, and modules in the disciplines of adult and continuing education, extension, training and human resource development.
Dr. Shamsuddin Ahmad

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PREFACE

* About Distance Education

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* Text and Resources

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ABOUT DISTANCE EDUCATION

* Distance education is full of challenges and opportunities. The challenge is to commit yourself to a schedule of achievement and to maintain that schedule. The opportunities are many: to increase your knowledge and application of the material so that you add value to the various processes in your life; to increase your value to your employer; and to prepare you for the continuous changes you will be facing.

* Participants in this process who are committed to their studies will be able to complete the program successfully.

* One of the advantages is that you are able to study at your own convenience — at home, in the office, during our leisure time, on your way to work — anywhere you can concentrate for a period of time on the material.

* It is important to keep in mind, however, that the total responsibility is in your hands, as you do not have regular weekly class sessions to push you into completing the assignments.

* Instructors can be contacted by telephone, E-mail, fax, and correspondence for any advice or consultation you feel you need. Remember, you will only get help if you ask for it.
INTRODUCTION TO THIS STUDY GUIDE

* The material you read in this study guide is meant to act only as a guide to the prescribed text, as well as to the readings recommended or provided.

* It is not meant to be a text in its own right. Topics or issues may be presented at some length to help provide a framework for you studying and to expand or emphasize material presented in the test.

* This study guide provides a framework of the important points which you should use to lead you in your study. Remember, it is only a guide to point out some of the important issues.

* At the end of every section, there are a number of pertinent questions which you should answer as they will help you to comprehend, apply and analyze the subsequent subject material.

* As you review your notes and answers for each section (topic) consider how the material applies to your workplace — would you do anything differently at work as a result of your experience in this course?

* You will notice that the Study Guide is printed on only one side of each sheet. This was a deliberate decision in order to enable you to use the back of each sheet as a place to make any notes or comments.
 ROUTINE PREPARATION

An essential part of your learning will be the study and preparation you do for each section of the course by reviewing any introduction to the various units in this Study Guide, be carefully reading the assigned chapters in the text, and the additional readings assigned, as well as others you may find. It is strongly advised that you answer the questions posed at the end of each topic.

Sometimes, as well, you will be asked additional questions in the Activities component of this Study Guide. The question for your final exam will draw substantially, but not exclusively, on the questions assigned for each unit of the course.

You will see from the schedule that you will have a maintain a vigorous pace of reading. The number of pages with each assignment have been noted and you should use this information to plan your progress through each section as it is critical that you stay ahead, or at least on target.

Learning should be a positive experience and to keep it as such, regular attention to your preparation and completion of the assignments is critical and rests with you.
ACTIVITIES

At the end of each section of this Study Guide there is an "Activities" component. To fully understand the course material you should complete all of the activities noted.

The Activities include review questions at the end of required reading from the text and other materials if any. You can draw your answer from your reading and also from your own experience. Your respond to the Activities section need not to be turned in. However, it is advised that you try to answer all the questions because the assignments and the final examination might contain materials discussed in the Activities sections.

A good idea when studying and preparing to answer the review questions, is to read the questions before you read the material. In this way you are aware of what material needs special attention as you do your reading. As well, it is always a good idea to read the Objective of a Topic prior to the actual reading of the Unit.

If you have difficulty in responding to the questions, review the related material in the text, the readings, and in the Study Guide.
SCHEDULE

The following schedule outline is a suggested structure so that you can pace your study and preparation for assignments and examination. You are encouraged to remain as close as possible to this guide.

Tutorials
There will be three (3) scheduled meetings during the semester for orientation, review, testing, and consultation. These sessions are critical and your attendance is very important.

Reading Assignments
The reading assignments are given on every topic of this Study Guide. The reading materials would be from the required texts or supplementary readings attached to the topics.

Review Questions / Learning Activity
Review questions / learning activity are also given at the end of every topic in the Study Guide. The questions might be assigned from the specific section of the required text or they might be developed by the instructor. This exercise will be an important indicator of your comprehension and application of the material.
TEXT AND RESOURCES

Required Text
The course required text is listed below with an abbreviation, given in parenthesis. This abbreviation will be used throughout the Study Guide to refer to the text.


Additional Reading
Frequently, you will encounter reading assigned from other sources. These additional materials are presented because the author(s) has(have) presented a specific point of view. You should include this material in your study as the assignments and examinations will include the content from these additional assigned readings.

You can also supplement your reading from other text. Some of the supplement text suggested are as follows:


EXAMINATIONS AND ASSIGNMENTS

Examinations
There will be a three (3) hour open-book final examination that will be worth 40% of the overall evaluation for this course. All topics will be covered in the examination.

Assignments
There are three (3) assignments, each worth 20% of the overall evaluation. The topics will be given at the end of Unit A for Assignment 1, Unit B for Assignment 2, and Unit C for Assignment 3. Due date for the assignment is the date your submission must be received in the IDEAL office at UPM. Please post or deliver your assignment so that it is received on or before the required day.

Assignment 1 due date:
Assignment 2 due date:
Assignment 3 due date:

The assignments are to be completed by the individual student without collaboration with other persons.

Address
For sending the assignments and correspondence please contact the instructors at these addresses:

Dr. Abu Daud Silong
IDEAL
Universiti Putra Malaysia
43400 Serdang
Selangor
<table>
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<th>Topic</th>
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SYNOPSIS

PP 538: DESIGNING AND MANAGING TRAINING AND DEVELOPMENT SYSTEM

The course offers a comprehensive view of training and development by blending theory and methodology to provide students both the conceptual frameworks and the “how-to’s” of training and development. It covers a holistic concept of training and development processes which includes current issues, principles of teaching and learning, training needs analysis, training methodologies and contents, training evaluation, and the management of training. At the end students will be able to understand, plan, implement, and evaluate training programs.
INTRODUCTION TO THE COURSE*

The purpose of this section is to describe and interpret the concept of training and a professionalization of training. This is not an easy task since there are many related concepts and most often the lines of demarcation between these concepts are not clear. The section however, will attempt to describe each concept and in the process will establish the parameters and working definition of each. Specifically, the section will include discussion on the concepts of lifelong educations, the section will shift to discussion on training and professionalization of training.

Lifelong Education and Adult Education

Education is more often deeply associated with schooling. "When you think of education, you tend to think of development of your children, and not of your development; of learning in school and not outside the school” (Adler, 1982, p.89). This is the traditional view of education, which is a very narrow concept. "That this error about education being completed at school is widespread..." (Adler, 1982, p.90).

However, this view is slowly changing. Scholars realized that education and schooling is not always synonymous. Writing on this phenomenon, Roger Boskier (1980) observed:

The idea of education received as a result of school attendance is replaced by a more dynamic concept stressing acquisition of knowledge, attitudes, and skills through experience, mutual instruction, and a lifetime of

* Adapted from Abu Daud Silong (1986). Professionalizing characteristics of the training profession in West Malaysia. Doctoral Dissertation, University of Maryland - College Park (Chapter II. Pp 27 - 51).
involvement in a broad array of formal and informal learning experiences (p.4).

The traditional concept has shifted to a broader view of education. Moving towards the new concept, education is seen to occur in many places and through many settings. It does not necessarily occur in schools and colleges. “The family, the church, the work place, the mass media, the library, and many other institutions also play important roles in the education of people, both young and old” (Darkenwald & Merriam, 1982, p.2).

In recent years scholars and planners have promoted this broader view of education through various concepts, mainly embodied in two main ideas, that is, lifelong education and adult education. Walter Mondale, in hearings before the subcommittee on Education of the Committee on Labor and Public Welfare, U.S. Senate, 94th Congress, First Session on S.2497 (the Lifetime Learning Act), December 18, 1975, commented:

During recent years we have been witnessing the development of an exciting new concept. We have seen its beginning in many educational institutions and organizations throughout the country, and we have heard it identified in a variety of different ways ... But whatever we call it, this is a movement based on the growing recognition of education as a means of meeting diverse and changing needs of Americans throughout all stages of their lives (Peterson, 1979, p. 1).

Thus education, through the concepts of lifelong education and adult education, has accepted the challenge of meeting the needs of people through their lives. Before discussing these two concepts in greater detail, several key terms have to be distinguished.
First, the difference between education and learning has sometimes been stressed in literature. According to Darkenwald and Merriam (1982), the concept of education involves the element of design — "the deliberate, systematic, and sustained effort to transmit, evoke, or acquire knowledge, attitudes, values, or skills. Education, in this view, is purposeful (deliberate), organized (systematic), and of consequential duration (sustained)" (p.6). Learning, by contrast, occurs in nondeliberate or incidental and unorganized manner and for a short duration. But this distinction may be misleading. The demarcation is not always clear-cut, the definitions are "admittedly arbitrary; it is by no means simple to classify any particular activity as either education or learning, and the potential for confusion, with the terms formal and informal learning is apparent" (Peterson, 1979, p.17).

Definitely there is a considerable overlap between the two concepts. As such there were certain looseness and inconsistencies in their usage in the literature. Often the two terms were used interchangeably. For example, in the United States the term often used in lifelong learning, whereas UNESCO employed the term lifelong education. This introduction does not does not attempt to discuss the two concepts in detail. Suffice to note that some scholars distinguished between them, whereas others used them interchangeably.

The differences between formal, informal and non-formal learning or education should also be clarified in the discussion of lifelong and adult education. Peterson (1979) noted these differences as follows:

- Formal generally refers to institution-based, structured learning relying on teachers' instruction; informal usually refers to non-school-based, less structured learning not pursued for credit, including what we called unintentional learning. Non-formal refers to organized educational activities offered by non-school organizations; this concept has evolved chiefly among adult education leaders in developing nations. Non-formal
education is characterized by flexibility, relevance to contemporary problems, and voluntary participation (p. 15-16).

Philip Coombs et al. (1973) made similar distinctions between formal, informal and non-formal education, but added that “there is overlap and a high degree of interaction between them” (p. 10). He defined informal, formal and non-formal education as follows:

By informal education we mean the truly lifelong process whereby every individual acquires attitudes, values, skills and knowledge form daily experience and the educative influence -- from family and neighbors, from work and play, from the marketplace, the library and the mass media. Through informal education, for example, a child acquires a substantial vocabulary at home before going to school, a daughter learns child care and cooking from helping and observing her mother, a son picks up occupational skills from his father and children and adolescents learn from their peers (pp. 10-11). By formal education we refer, of course, to the hierarchically structured, chronologically graded ‘educational system’, running from primary school through the university and including, in addition to general academic studies, a variety of specialized programmes and institutions for full-time technical and professional training. ... we defined non-formal education as any organized educational activity outside the established formal system--whether operating separately or as an important feature of some broader activity -- that is intended to serve identifiable learning clienteles and learning objectives (p.11).

The above key terms are relevant to the understanding of the concepts of lifelong education and adult education, which will be discussed in the next sections.
Lifelong Education

In recent years lifelong education or lifelong learning as it is sometimes called, is getting wider and closer attention throughout the world. As a concept, it has been described by many authors (Cropley, 1980; Peterson, 1979; Skager & Dave, 1977; Dave 1976; Lengrand, 1975). But “to conceptualize lifelong education in its entirety on account of its comprehensiveness and multiple modalities” (Dave, 1976, p.35).

Scholars see lifelong learning as a comprehensive concept, which includes formal, non-formal and informal learning, covering the lifespan of an individual. “When we speak of lifelong education, it is the unity and totality of the educational process which we have constantly in mind” (Lengrand, 1975, p.20).

Lifelong education also has several dimensions. Peterson (1979) described three elements of lifelong learning: (1) there should be coordinated opportunities for people of all ages, (2) all organizations, schools and non-schools, should be involved in providing learning, (3) the community should participate in planning and conducting learning activities. Carelli (1979) also indicated several dimensions of lifelong learning:

First of all it includes the dimension of time, since education lasts as long as the individual’s life. Secondly, it considers all factors affecting the process, since education takes place in formal settings (school), in non-formal arrangements (services provided outside the school system), and under informal conditions (all other educational settings not covered by the proceeding two). Finally, it covers the dimension of human characteristics affected by education, since education has to develop knowledge, skills, attitudes and behavior, as well as motivation (p. Xv).

Cropley (1980) described lifelong learning as “a comprehensive
phenomenon including traditional school learning and vocational learning, but also
 going beyond learning as it is traditionally understood in formal education systems, and including learning to self-development of self-actualization” (p. 2). Graphically, this concept is illustrated in Figure 1, where formal schooling is seen as only a small portion of the total education influences of an individual. On the other hand, UNESCO referred to lifelong education as the master concept (Faure et al., 1972). This concept views lifelong education as the basic organizing or integrating principle.

Fraure (1972) described some of these principles: (1) Every person must be given a chance to learn throughout his life. “Education must be carried on at all ages... according to each individual’s needs and convenience” (p. 181); (2) Lifelong education embraces all aspects of education. “Lifelong education is not an educational system but the principle on which the overall organization is founded” (p. 182); (3) Lifelong education should be flexible. “Artificial or outmoded barriers between different educational disciplines, courses, and levels, and between formal and non-formal education should be abolished” (p. 189), and (4) Education should be conducted through various means. “All kinds of existing institutions, whether designed for teaching or not, and many forms of social and economic activity, must be used for educational purposes”. Lifelong education has not received strong legislative and funding support. However, as a concept it has been widely discussed. Linton (1980) observed:

Few educational concepts in the last decade have elicited more definitions than that of lifelong education but it is doubtful if these have helped to clarify the concept and identify its essential components. They range from Dave’s pénètre offering which sees it as a comprehensive and unifying idea which includes formal, non-formal and informal learning for acquiring and enhancing enlightenment so as to attain the fullest possible development in different stages and domains of life, to Jessup’s...
Figure 1

The Relationships of Schooling
to the Spectrum of Educational Influence

<table>
<thead>
<tr>
<th>AGE</th>
<th>THE TOTAL SPECTRUM OF EDUCATIONAL INFLUENCES (of which schooling is part)</th>
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<tbody>
<tr>
<td>S</td>
<td>From about 10 to 25 years according to the society</td>
</tr>
<tr>
<td>C</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>About 5 years of age</td>
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<tr>
<td>O</td>
<td></td>
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<td>L</td>
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</tr>
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Birth Least

Death Most

Source: Cropley (1980, p. 6)

metaphysical and sociological definition which views it as a temper, a quality of society, that evinces itself in attitudes, in relationships and in social organization (p. 25).

Thus far, this introduction has not attempted to make a distinction between lifelong education and lifelong learning. There have been many and prolonged debates regarding this matter. For conceptual purposes, this introduction adopts the distinction proposed by Rivera and Dohmen (1985). They commented:

This paper carries on the lifelong education/lifelong learning debate, arguing that lifelong learning is the larger, and therefore truly 'master' concept, while lifelong education is an instrumental concept aimed primarily at educational policy initiatives and the development of systems.
for education. Thus, lifelong learning is recognized as a transformative concept, one which speaks to the nature of individual, while lifelong education represents the institutional means governments have before them to advance education as an instrument, usually targeted toward socioeconomic development but often enough with specific political purposes (p. 135).

Thus Rivera and Dohmen (1985) concluded that lifelong education are two and not one. This observation cleared some of the fuzziness in the American understanding of lifelong learning and pointed out some of the misunderstanding with UNESCO’s definition which tends to mix the concepts of lifelong education and lifelong learning. They asserted that “lifelong learning is the true master concept, especially for adult educators who are concerned with questions of voluntary participation in adult education and see in it a more acceptable concept than that of lifelong education which implies organization of adult learning opportunities, usually at the national (federal/central) level, through policy legislation” (p. 145).

Despite unclear concepts, lack of support from legislators and policy makers, many scholars are optimistic about the future of lifelong learning and lifelong education. “Lifelong learning, as we have tried to conceive it, offers a vision – a prospect of a future education and learning order in which all people, in many ways and using a great variety of resources, can with ease engage in learning throughout lives” (Peterson, 1979, p. 12).

Adult Education

Viewed in the broader context, education includes both youths and adults. “If it is agreed that the educational process must continue throughout the life of the individual, then it is impossible to argue that there is an age set aside for
education" (Lengrand, 1975, p. 50-51). Recent trends have indicated that more adults, who have been out of school, are involved in education. This trend is a result of social change, "much of it associated with demographic and economic developments" (Long, 1983, p. 50). Some of these developments include changing age profile, rising educational levels throughout American society, greater interest in the rights of special populations, shifting attitudes towards work, increasing frequency of career and occupational change, occupational obsolescence, mandatory continuing education, increasing acceptance of nontraditional approaches to education, and finally changing expectations and the expansion of education (Long, 1983).

In discussing adult education, scholars often mentioned the definition of adulthood. "Adult and continuing education involves adult. At first glance there may be nothing confusing about the notion of adulthood but, when the term has been translated into legislative terms and budgetary provisions made, difficulties are encountered" (Boskier, 1983, p.13). He further noted that in many countries "an adult is a person who has reached an age which may range from 17 to 21 years" (p.13).

In the United States, the Adult Education Act describes an adult "any individual who has attained the age of sixteen" (P.L. 95-561). Coolie Verner (1964) stressed the concept of social role to define adulthood when he said: "an adult is a person who has come into that stage of life in which he has assumed responsibility for himself and usually to others, and who has accepted concomitantly a functionally productive role in the community" (Boskier, 1983, p.14). But defining adulthood is often problematic, "for the word adult connotes not only biological but also social and psychological maturity in regard to judgement, autonomy, responsibility, and the assumption of adult life roles" (Darkenwald & Merriam, 1982, p.8). Malcolm Knowles (1980) also agreed on
this position. He wrote:

There are, of course, many definitions in current usage. There is the dictionary definition. But this isn’t very helpful. Then there is the psychological definition: achievement of the ability to produce — which varies from era to era, culture to culture, and individual to individual (and probably from sex to sex). And there are various legal definitions — voting age, driving age, drinking age, juvenile delinquent versus adult criminal age, age of consent, and the like. But there is a wide variation among governments and eras in these definitions, as well (p. 24).

Recognizing that biological or age-related definition is of little use, many adult educators used the functional definition. According to this view, “an adult is someone who has left the role of full-time student (the principal social role of childhood and adolescence) and assumed the role of worker, spouse, and/or parent” (Darkenwald & Merriam, 1982, p. 8). Darkenwald and Merriam (1982) further indicated that the definition, “while not totally satisfactory, does at least acknowledge that an adult is a person who performs socially productive roles and who has assumed primary responsibility for his or her life” (p. 8).

Knowles (1980) noted two important criteria for determining an adult: (1) Who behaves like an adult, that is, who performs adult roles (a social definition); (2) Whose self-concept is that of an adult (a psychological definition). The first criterion includes social roles perform by adults such as roles of a worker, spouse, parent, responsible citizen, soldier, etc. The second criterion stresses that “a person is an adult to the extent that that individual perceives herself or himself to be essentially responsible for her or his own life” (Knowles, 1980, p. 24).

With all these conceptual problems, arriving at the definition of adult education is not a very simple task. "Adult and continuing education has been
beset by a lack of agreement and precision concerning fundamental concepts and process” (Boskier, 1980, p. 13). It is important to note that no universally acceptable definition is possible. The approach introduction is to take a more comprehensive definition, and this was provided by UNESCO (1977). It is the official world definition:

The term adult education denotes the entire body of organized educational process, whatever the content, level, and method, whether formal or otherwise, whether they prolong or replace initial education in schools, colleges, and universities as well as in apprenticeship, whereby persons regarded as adult by society to which they belong develop their abilities, enrich their knowledge, improve their technical or professional qualifications, or turn them in a new direction and bring about changes in their attitudes or behaviors in two-fold perspective of full personal development and participation in balanced and independent social, economic development... (p. 2).

In addition to the various definitions, the field of adult education has another complication in its understanding. It is known by many other names. “Even the term adult education, which once described the field, is being replaced by such terms as continuing education, recurrent education, lifelong education, and human resource development” (Stubblefield, 1983, p. 16). In fact to this list other terms can be added, such as permanent education, nontraditional education, community education, andragogy, and extension education. It “has not won universal acceptance by those involved with the education of adults” (Darkenwald & Merriam, 1982, p. 12).

The most often used synonym is continuing education (Darkenwald & Merriam, 1982). Continuing education indicates that the adult learner is continuously pursuing education beyond the school, that is, throughout the
lifespan. “Colleges and universities, as well as many professional organizations, generally refer to their adult education activities as continuing education, while public school systems more frequently used the term adult education” (Darkenwald & Merriam, 1982, p. 12). Duncan D. Campbell (1977) also observed this fact, “Continuing education, is often used to denote adult learning at an elevated level, including the advancement of professional or vocational competence, following initial, formal training. Or it may simply mean education continued after departure from the school or other educational institution” (p.8).

Recurrent education is also based on the principles of adult education and is mainly used in the European countries. It promotes lifelong learning through the concept that work and study should alternate periodically throughout life as needs and situations change. “Recurrent education suggests the regular periodic return of adults to learning to meet emerging social or vocational change and, in more opulent societies, the setting aside by adults of periods in their lives dedicated to full-time study aimed at personal development” (Campbell, 1977, p.9).

Nontraditional education is an American term popularized by the Commission on Non-Traditional Study. The commission consists of a panel of educational leaders who sponsored several studies in the early 1970s. They were concerned with “the new developments epitomized by the external degree and by corollary approaches to awarding degree credit through such vehicles as examination and assessment of experiential learning” (Darkenwald & Merriam, 1982, p.2).

Community education denotes any kind of educational activity developed and conducted for the community. Community education is not the same as community development. Community development refers to the solving of
community problems which involves a change agent, whose role is seen as that of catalyst or adviser to promote necessary political, social or economic change. On the other hand, community education is a term, more frequently used as a concept to embrace “a community-wide approach to learning directed to all age groups through the efficient, intensive and extensive use of the community’s education facilities” (Campbell, 1977, p.9). Community development is associated with adult education whereas the latter has long been associated with the community school movement i.e., making the neighborhood public school a center for education, cultural, and recreational activity for people of all ages.

Andragogy was also initially used in European countries. It was popularized in North America by Malcolm Knowles (1970, 1980). Originally he defined andragogy as “the art and science of helping adults learn, in contrast to pedagogy as the art and science of teaching children” (1980, p. 43). However, over the years Knowles shifted his concept and proposed that andragogy and pedagogy are not dichotomous, but “rather as two ends of a spectrum...” (1980, p. 43). Most often in adult education, andragogy is a concept dealing with sets of assumptions and methods pertaining to the process of helping adults learn.

Extension education is employed by the Cooperative Extension Service. It refers to the educational and information services provided by the agency, mainly related to agriculture, nutrition, homemaking, consumer economics, and 4-H development, and more recently community development. “Extension education, essentially an American term, connotes adult learning activity related to agricultural practice and oriented to the cooperative extension programs emanating from land-grant institutions in the USA and involving federal, state and university participation” (Campbell, 1977, p.8).

Obviously, conceptualizing adult education is not an easy task. William
Rivera (1982) noted that this difficulty lies “in the vastness and diversity of the field in its breadth of study and extent of practice. Accordingly, it means different things to different adult educators and including others concerned with the education of adults” (p.2).

Training

Organization, business and industry seldom used the term adult or continuing education. On the other hand, “adult education is generally referred to as training or human resource development...” (Darkenwald & Merriam, 1982, p. 14). Other employers such as the army and many government services also use the term training. “Training in Government, Industry, and the Military, is the application of adult education process to achieve organizational and societal goals” (Bolsi, 1980, p. 27). Training has often been associated with education. In many instances the term training and education are used interchangeably. Kenny and Donnelly (1979) observed that the word training is also used as a synonym for education.

However, some scholars used the concept of training as distinct from education and are perhaps worth noting. Singer (1978), for example, distinguished the two and defined them as follows:

Education is a process of acquiring background knowledge of a subject. Normally this takes place at schools, technical colleges, universities, appreciation courses of by private study. Training is learning to use background knowledge in a specific work situation. It is thus concerned with job performance as well as with the application of knowledge at work. Normally, industrial training courses have an educational segment and to this extent the two overlap (p. 10-11).
Literature indicated that there were some controversies in the usage of training and education. Glaser (1962) indicated that these controversies “centered around the meanings of and differences between the operational consequences of the words (education and training)” (p.3).

Glaser (1962) made one important point regarding the training-education distinction. “Training and education are two aspects of the teaching process. The two terms refer to two classes of teaching processes that are not mutually exclusive” (p.5).

In another instance Glaser (1962) noted that when the words training and education are used, the distinctions reside in the outcomes expected. The term training is applied to a process if the outcomes can be specified as a particular kind of performance or behavior response. However, if the behavior cannot be specified, if the learner is expected to transfer his new behavior to a variety of new environments, the process is called education. Training narrows the range of responses among trainees, while education broadens the range. Thus, teaching financial directors how to strike a balance sheet will be considered training whereas teaching the same group the general theories of money flow can be considered education.

Though the demarcation of education and training is hard to conceptualize, a separate definition is always useful. Training has been broadly defined by Johd H. Proctor and William M. Thornton (1961) as “the intentional act of providing means for learning to take place” (p. 19). The act refer to the sequence of events necessary for providing the required learning experiences. McGhee and Thayer (1961) were more specific in their definition. They defined training in industry as “the formal procedures which a company uses to facilitate learning so that their resultant behavior contributes to the attainment of company’s goals and
objectives" (p. 3). There are several aspects that may be pointed out in this definition.

First, the process of training should contribute to the attainment of organizational goals and objectives. This means that if there are no apparent goals in the organization which a training activity can influence, then undertaking training activities may not be worthwhile. Second, the cost effectiveness of training should be compared to other approaches in achieving organizational goals. Third, the question of contribution of the training activity should be considered. This involves the whole notion of programming. Finally, training will include many activities designed to develop many diverse behaviors. The central theme of this definition includes that of the facilitation of learning.

Nadler (1970) also distinguished between training and education. He described training as:

... those activities which are designed to improve performance on the job the employee is presently doing or being hired to.... The purpose of training is either to introduce a new behavior or modify the existing behaviors so that a particular and specified kind of behavior results. (Pp. 40-41).

Employee education is defined as those HRD activities which are designed to improve the overall competence of the employee in a specified direction and beyond the job now held (p.60).

The dividing line between the concepts of training and education is not clear. “Distinguishing between the purpose and methods of education and those of training is not always easy, as the two overlap” (Kenny, Donnelly & Reid, 1979, p. 2). However, they indicated that training and education differ in four
main areas viz: (1) the degree to which their objectives can be specified in behavioral terms; (2) the time normally needed to achieve these objectives; (3) their methods in learning; and (4) the types of learning materials employed. However, in many practical cases even those differences are difficult to detect.

Another concept related to training is the term development. It is often mentioned in literature whenever training is discussed. “Not all training specialists distinguish among training, education and development. They use the three words interchangeably to describe what they do for their organizations” (Laird, 1978, p.9). Miller and Verduin also indicated the “confusion in the use of the terms training, education and development” (1979, p.ix).

Some scholars differentiate between training and development (Laird, 1978., Nadler, 1970, 1980). “The distinct separation of learning into training, education and development is more than a semantic exercise. In fact, the distinction is crucial if HRD is to make a necessary and important contribution to an organization” (Nadler, 1980, p. Viii). Nadler, after noting the differences between education and training, went on to describe development. He noted that development is concerned with preparing workers so that they can “move with the organization as it develops, changes, and grows” (1970, p.88). With regard to this point, Laird (1978) observed:

The development activity often takes the form of university enrollments for top executives. They can thus acquire new horizons, new technologies, new viewpoints. They can lead the entire organization to newly developed goals, postures, and environments” (p.10).

Miller and Verduin (1979) distinguished the 3 concepts according to the forms of programming. They elaborated:

First, there is the type of learning that is job related and directed toward the
improvement of on-the-job skills, typically referred to as training. Second, the learning that is associated with job preparation or for a future job is noted as education. And third, learning that relates to the future well-being of the organization, society, and the individual is referred to as development (p. 2).

Some authors developed other concepts related to training, education and development. One of these is staff development. Staff development is described by Miller and Verduin (1979) as follows:

Staff development efforts, for the most part, are devoted to training -- learning for immediate on-the-job skill needs. Staff development, however, is not exclusive of education and development. Most programming for staff members focuses on such activities as orientations, managerial and supervisory skills, technical and professional changes, human relations, and general staff development (p. 2).

The primary contention of staff development is the continuation of educational experience for professionals. In the words of Miller and Verduin (1979), staff development “is actually continuing education and training for the professional processes” (p. Xi).

Nadler (1970, 1980) put the terms training, education and development under one comprehensive concept, the Human Resource Development (HRD). He (1970) defined HRD as: (1) a series of organized activities, (2) conducted within a specified time, and (3) designed to produce behavioral change (p.3).

Finally, in discussing training and its related concept, there is a word of caution. Nadler (1970) noted “One of the immediate problems faced in a book of training is to get agreement on the term...” (p.1).
In a field which does not have an agreed upon academic base, each person is inclined to define terms based on the academic discipline in which he has been reared (Nadler, 1970, p. 3).
REVIEW QUESTIONS

1. Define terms:
   i. Education
   ii. Adult Education
   iii. Lifelong Learning
   iv. Training
   v. Development

2. How would you distinguish the concepts of education and training.

REFERENCES


UNIT A

INTRODUCTION TO DESIGNING AND MANAGING
TRAINING AND DEVELOPMENT SYSTEM

TOPIC 1

CHALLENGES AND USES OF TRAINING AND DEVELOPMENT

TOPIC 2

FUNCTIONS OF TRAINING AND DEVELOPMENT

TOPIC 3

PROFESSIONALIZING OF TRAINING: ROLES AND
COMPETENCIES FOR TRAINERS

TOPIC 4

TRAINING MODELS
TOPIC 1

CHALLENGES AND USES OF TRAINING AND DEVELOPMENT

OBJECTIVE
To describe the concept of training and development through the understanding of related terms, issues, and challenges.

CONTENT
* Learning Objectives
* Introduction
* What is Training
* Continuing Professional Education
* Issues and Challenges of Training and Development
* Required Reading
* Learning Activities
* Reference
TOPIC 1

CHALLENGES AND USES OF TRAINING AND DEVELOPMENT

LEARNING OBJECTIVE

1. To familiarize student with the basic concept of training and development in the perspective of an organization.

2. To expose student with the issues and challenges facing trainer and training manager in the planning and implementation of a training program.

INTRODUCTION

One of the important functions of management is the development of its employees. Employees should be given opportunities to develop and improve their knowledge, skills, and attitude so that they could efficiently contribute to the organization. Continuing education before, during, and after employee service is an important activity in staff development. According to Apps (1988), information in this world will increase one-fold in seven years, and half of what the professionals learnt in a formal setting will become obsolete in less than five years. Therefore, it is important that employees are given continuous training in order to enable them to face the increasing challenges in the future of information decade.

An organization usually conducts training for its employees. In fact, training has become a major industry in Malaysia. Although there is no accurate data, every organization allocates a substantial amount in its budget for training. In the United States, an estimate of US$60 billion was said to have been spent by
business agencies, industry and government every year to conduct training related to job requirements (Merram & Caffarella, 1991). This amount exceeds the amount actually spent by the entire institute of higher learning in the United States (Watkins, 1989). Training also involves many other resources such as energy, expertise, time, and equipment. Nevertheless in almost all organizations conduct training programs through professional associations, contracted to an independent training consultant, or do it their own.

Training is related to the increase level of employees’ performance through changes in knowledge, skills, and attitude. It is carried out through reactive and proactive approaches. Training is also conducted to prepare the workforce to face a more competitive economy in the future. Fast economic and technological changes requires the organizations to continuously train their workforce. Training is also conducted to prepare employees for promotion, to change jobs, preparation for retirement, and when a new equipment or new work procedures be adapted and practiced.

It is difficult to conduct an effective training program. The department or unit that manages their own training programs must have the personnel who possess the necessary knowledge and skills. Training is when science merges with the arts and the result is knowledge from research, modified and applied by a creative trainer. There are many questions that must be answered before a training program is conducted. For example, what type of training must be conducted? What is the purpose of training? Which technique is the most suitable? How do we know whether a training program is effective or not? We are able to answer all these questions if we have the knowledge and skill in training especially in the planning of training program, the learning process, the principle of learning, the principles of adult teaching, and how to assist adults learning as well as the technical knowledge as a content of training.
WHAT IS TRAINING?

If this question is posed to the public, we will receive many answers regarding training from different perspectives. For the purpose of this course, we will define training as a teaching and learning effort organized by a formal institution with the purpose of improving the level of knowledge, skill or attitude of employees in an organization. We shall regard training as learning in the workplace under the supervision of a teacher, instructor, or mentor. In Malaysia, most of the training programs conducted are in a formal manner where a major portion of the training program is organized by the training department or by consultants. It happens in a classroom or in a specific environment and normally is a group activity.

Training can also be self-directed (Knowles, 1987). According to Merriam and Caffarella (1991), self-directed learning is planned, implemented and evaluated by an individual himself or herself. In self-directed learning, the learning activity is conducted individually or with the help of a trainer or mentor. The employee learn in an informal manner and not in a group training program. Another learning activity occurs in a workplace is the informal learning. For example, an employee knows a new work technique during a conversation with another working colleague while driving on the way home, observing another employee using a new computer program etc. This informal method of learning frequently occurs in the workplace. Research shows that professional employees more often receive new information in their discipline through informal manner as compared to the formal method of training (Cervero, 1995). However, the spontaneous and unplanned learning method is not systematic. The learning’s results could not be controlled as it occurs voluntarily. If informal learning method can be planned and arranged systematically it will enhance the development process of employees more efficiently.
CONTINUING PROFESSIONAL EDUCATION

In the discipline of adult and continuing education, there is a sub discipline of study known as the Continuing Professional Education (CPE). Professional who has a different work responsibility from another non-professional employee in an organization requires a different approach of training as compared to a lineworker. Professional education is important in our everyday lives. A doctor treats us when we fall sick, teachers and lecturers teach our children in schools and universities, engineers construct buildings, roads and bridges while the police and the army maintains peace in the country. Therefore, professional education should continuously be provided to the professional employees in order to improve their knowledge, skills and attitude to enable them to face their heavy responsibilities. Trainers and training managers who are given the responsibility of planning the continuing education program for professionals must know the most effective practice for CPE because in many situations, the environment where the professionals practiced is characterized by uniqueness, uncertainty and value conflict (Cervero, 1988).

There are many similarities and differences in training a professional and a non-professional. Basically, training is required by all employees who are adults sharing the basic human process such as motivation, cognition and emotions even though the professionals work in a special setting and context different from a non-professional employee (Schon, 1987). Training for a professional employee must be suitable with the setting and context stated. Moreover, professionals are important in an organization and therefore must require effective and continuous training to increase their performance and efficiency.

ISSUES AND CHALLENGES OF TRAINING AND DEVELOPMENT

Training is closely associated with human resource development of a
country. The effectiveness of training will enable an organization to progress further and together these organizations will help to develop the country to a higher level and thus be able to compete with other countries in the future information decade. Hence, the ultimate issue and challenge for trainers and training managers is to prepare an effective training program for that purpose.

In order to prepare an effective program, the trainer and training manager themselves need sufficient training first. Most often, trainer and training manager only received training in the area of their technical discipline (95%). Only a small number receive formal training in the area of continuing education (Griffith, 1985). Trainers who do not know the whole concept of training will only limit their capabilities and creativities to conduct effective programs. Many research on training program development show that needs assessment if conducted at all does not consider the opinion of training clients. Most often, the personnel in the training department with the help of content specialist will plan the training programs themselves. Although most training models consist of elements of formal assessments of the learner’s needs, it is only done in a superficial manner if the assessment is carried out (Caffarella, 1988).

Organizations frequently use training to solve most of their problems because management often considers the lower level of employees as the source of problems. This leads to a directive for the employee to attend training even though the source of the problem is not related to training at all. Besides training, some of the organizational problems can also be solved through counseling, monitoring, change in the management and leadership, changes in the standard operating procedure and the like. However, the most important challenge is to identify what is the source of the problem so that the planned corrective measures do not focus on trying to solve the symptoms of the problem.
In addition, research show that the evaluation of training is most often focused to the institutional variables rather than the learning activity itself (Kirkpatrick, 1987). Evaluation is normally done using a 'smiling sheet' at the end of a training program in order to know the reactions of the participants on matters such as the achievement of objectives, the effectiveness of the presentation, the well-being of participants in the facility where training is conducted as well as the accommodation and meals provided for participants throughout the training program conducted. This type of evaluation does not measure the real impact of learning. The learning impact is only assume rather than overtly measured (Shamsuddin, 1995). A good evaluation will definitely take time and require expertise. Nevertheless, evaluation must be carried out and the results must be used to prove the success of the program and to know the opportunity to improve the program in future. The results of the evaluation should also be able to show the accountability of the resources used and the responsibility of the training function.

While organizations use training to develop their human resource, employees also require training to develop themselves and their families. An organization that is aware of this need will plan comprehensive programs for its employees that also covers personal development of their employees. As an example, there are organizations that provides the opportunity for their employees to further their studies or receive training related to self-development. Such training must be encouraged and is one of the training functions in organizations.

The issues and challenges mentioned earlier is not only faced by trainer and training manager but also by researcher, lecturer and writer in training and development and other related disciplines. Without their efforts and attentions, training and development discipline would not have expanded. We require more research on training conducted in Malaysian context. The rapid change in technology and information will require our knowledge base to be increased and
updated. The relationship between practice and theory must be made closer because both practice and theory are closely interrelated. Training and development must be developed more effectively through research rather than through sink or swim or trial and error approaches.
REQUIRED READING


REVIEW QUESTIONS

1. If you had attended several training programs before, please state your comments with regards to one of the training programs that you have attended. You can also comment the reasons for your likes and dislikes towards the training program and ways to improve the training program in future.

2. In your opinion, what is the most important factor in the planning and implementation of a training program?

REFERENCE


TOPIC 2

FUNCTIONS OF TRAINING AND DEVELOPMENT

OBJECTIVE
To familiarize students to the fundamental function of training and to create awareness of the importance of motivation.

CONTENT
* Learning Objectives
* Introduction
* Objectives of Training & Development
* Education and Change
* Adult Motivation to Learn
* Terms for Review
* Required Reading
* Review Questions
* References
TOPIC 2

THE FUNCTION OF TRAINING AND DEVELOPMENT

LEARNING OBJECTIVE
For the student to understand the primary function of training and the importance of motivation in educating adult learners.

INTRODUCTION
A successful training and development function stressed the importance of integrating training policies, objectives, and strategies with the overall plan of the organization. Too often, this function is separated from the main stream of organizational activities. The training department has its own separate set of objectives and activities which may not have an impact and bearing on the performance of the organization. To be effective, training has to be part and parcel of the business plan of the organization.

OBJECTIVES OF TRAINING AND DEVELOPMENT
Robinson (1988) has identified several responsibilities of a training department viz-a-viz:

- producing corporate plans, manpower plans and business strategies together with the management
- producing training policies, plans, and budgets
- selection of trainees
- conducting induction / orientation program
- identification of training needs
- designing and conducting training programs
organizing continuing education for employees
- evaluating training
- conducting follow-up training
- development training staff
- liaising with others in the organization and outside the organization
- providing advice and services related to training
- monitoring and controlling training activities and resources
- developing training as a profession

EDUCATION AND CHANGE

As mentioned of the objective of education, the basic objectives of training is to bring about change with regards to knowledge, skill and attitude. The three elements of change is hoped to bring about permanent change in the expected behavior or performance. Therefore the learning process should be democratic and not forced. Awareness and motivation is necessary in the training process in order for change to be voluntary.

Human, wherever they are, do not like change. A participant may sit in the same place during the whole training session for two or more days. Trainers may teach using the same procedure repeatedly. In restaurants, we will request for the same type of food for most of the time. A change is regarded as a threat because the advantages of a change are not readily observeable. However, if we are able to see the advantages of change, as compared to the present status quo, then change is easier. Basically, every human can change. Change can be brought about by enforcement or through the democratic learning activity. Change through the learning process is preferable because it occurs voluntarily ant it must begin with an awareness for the need to change. Change through education is more permanent especially when it comes from a person’s inner needs to change.
There are many types of theories and models of change. A change as a result of training is a planned change where basically it requires careful planning, implementation, and evaluation to ensure a successful change. In the context of training, a planned change is developed from models of training that will be discussed in topic 4 of Unit A.

ADULT MOTIVATION TO LEARN

Human need to be motivated in order to change. When an adult is motivated to learn, they will work harder, learn more and enjoys the fruits of their success in the process of learning. Trainers and training managers who have motivated trainees will be more responsible in doing their work and normally they will be more motivated in planning and teaching. According to Wlodkowski (1985), there are six major factors that will influence the level of motivation of an adult learner. These factors are attitudes, needs, stimulation, emotion, competence and reinforcement.

Attitude

Every human being has an attitude towards something. An attitude is formed from the combination of several concepts, information, and the emotion felt at the time a predisposition to like or not to like towards a certain matter (Johnson, 1980). Attitude plays a very important role in the behavior and learning of an individual. An attitude formed will prepare an individual to face a certain experience in life. It enables us to accommodate to something new automatically. For example, a newly promoted Human Resource Manager will be very interested to attend a seminar advertised in the newspaper. The Manager will attend the seminar with high hopes to learn. The seminar went on well and effectively. The organizing committee has effectively done their work and the paper presenters were able to communicate their information to the participants efficiently. Thus the seminar gave new insight to the Manager and this makes him to encourage
other managers to participate in the similar seminar in the future. If the seminar went the other way round, the manager with a negative attitude will discourage other employees not to attend the seminar.

Attitude is not born with man. It is formed as a result of human’s experiences in life and since it is learnt, it can be modified, changed and unlearned to form a different attitude altogether. All activities related to training will influence the attitude of participants now and in future. A participant with a positive attitude towards training will change more readily than a participant who has a negative attitude towards training.

Needs

Needs will provoke a man to react. According to Vlodkowskii (1985), needs is an inner feeling which is experienced by an individual to achieve a certain objective. This inner need will provoke an individual to react and when he achieves a certain objective that he has set for himself, he will feel satisfied. Physical attributes of needs are such as thirst, hunger and sleepiness, while some of the examples of spiritual attributes of needs are such as a need for achievement and a need for a sense of belonging.

Without needs an adult learner will not have the desire to study. In a training situation, there exists two types of situations that involves needs. The first situation is when a trainee attends a training program when he feels that he needs more information or acquire new skills in a certain discipline. In the second situation a trainee attends training as directed or specified by the management. As such, a trainee in the later situation will not have the inner needs to learn and therefore will not be able to focus his full concentration in the learning process. It is the responsibility of the trainer and training manager to create the awareness for the trainee’s needs to learn. By creating this awareness, the trainee will
voluntarily feel the needs to learn. It is important to remember that an individual should not be forced to feel this need.

The most popular theory on needs is proposed by Maslow (1970). According to the author, human has different levels of needs. The lowest level of needs is the physiological needs such as thirst and hunger. The next level is the need for security followed by the need for love and a sense of belongingness, the need for self-esteem while the highest level of need is the self-actualization need. If the physiological need is not satisfied, it is difficult for an individual to achieve the next level of need. For an adult, learning is an activity to achieve a higher level of need such as esteem and self-actualization. However, if a man does not feel safe to learn or the need to fulfill his thirst and hunger is not satisfied, his learning process will be affected.

Both a trainer and a training manager who are aware of these needs will be able to plan a training program that suits the needs of their customers. For example, a group of low-educated employees would be more interested to fulfill the need for their survival (physiological and safety). However, the upper level management employees who are highly educated will need training for self-development, achievement, and self-actualization.

Stimulation

Stimulation is any external factor that causes an individual to react towards it. This stimulation may make a person feel happy, scared, bored, or surprised. Research shows that stimulation is important in human development. Without stimulation, adult will not feel or react towards their environment effectively. Stimulation constantly activates the mind and be receptive to challenges. Stimulation will also make adult more attentive towards these challenges.
We may have a positive attitude towards learning and have needs to acquire a higher education level, but if the teaching process by the trainer is unstimulating, sooner or later we will feel bored. However, a stimulating experience will encourage us to study more seriously, be active and critical. The capacity to learn is least when we feel bored. As a trainer and training manager, we must plan our teaching process to be constantly stimulating throughout the training period.

Affect

Affect is related to experiences of feelings or emotions, concern or passion of an individual during a learning process. The process of learning will not happen when there is no occurrence of any emotions. Emotions will motivate or demotivate an individual to learn. Most often, learning is very effective when we are happy. On the other hand, we will not learn effectively when we are being pressured, sad or restless. Emotions influence our thinking and our thinking influence our actions.

Emotions often affected by time. The quality of emotion is very strong when we just experience the emotion. For example, a trainee who has just lost a loved one will feel very sad and will not have much interest to study. It will take some time for him or her to overcome this feeling and gradually take an interest again in learning. The trainer and training manager must be sensitive towards their respondents’ emotions in order to encourage an effective learning process.

Competence

Man has a natural instinct to learn at a very early age and will make an effort to be competent in his own environment (Weiner, 1980). Such attribute helps adult to control and manage the environment to his or her own advantage. When a man feels competent he is driven to take an initiative to learn effectively and will feel satisfied for doing so. An adult will feel more motivated when he or she has effectively learnt what he values.
In the process of learning, an individual will feel more confident of his ability to learn when he feels that he has acquired more knowledge, skill or a more positive attitude. A trainee will be motivated to learn conscientiously when he finds out that he is able to handle a more modern printing machine skillfully. This feeling will make him or her find every opportunity to learn more and be more skillful. Such self confidence will encourage adult to eagerly use his or her recently acquired knowledge and skill after the training. This will prevent adult from making mistakes which lead to being less competent.

Competence is closely interdependent with self confidence in the learning process. Competence creates the feeling of self confidence and this will encourage learning and undoubtedly increases the person’s competence further. This relationship enables the expert or champion to further increase the skill in his chosen discipline. Learning can be encouraged if a trainer and training manager gives priority to create an effective method of competent learning. For example, in a training that stresses on skills, a trainee has the opportunity to show his newly possessed skill in a demonstration to the public.

Reinforcement

Reinforcement, in the field of psychology becomes an important variable in the process of encouraging and preventing an individual to continue with his action. Psychologists discovered that a suitable positive reinforcement such as praise, attention and recognition of an individual’s success in work will motivate him or her to continue performing well or to learn the benefit of his good performance. Positive reinforcement can be in tangible form such as money and material rewards or social form such as an agreement or attention and affection. These incentives will speed up the process of learning especially for adult learners.
Negative reinforcement, on the other hand can stop the process of learning altogether. Adults are very sensitive and dislike negative reinforcement. Therefore it is necessary to avoid or not use negative reinforcement in order to obtain real learning. For example, a 10% deduction from a trainee’s salary who is not able to complete his training successfully can be a threat. Such negative reinforcement method is considered a threat in learning and real learning definitely will not occur. A trainee will find alternatives to avoid punishment. Little recognition of a trainee’s success or achievement during the process of learning is also another form of negative reinforcement. A trainer or training manager who gives negative comments and only focuses on mistakes made by a trainee who has just learnt how to drive a bulldozer will slow down the learning process and demotivates the trainee.
REQUIRED READING


REVIEW QUESTIONS

1. Why is it important that the training is introduced in the formulation of corporate plans and strategies?

2. What is manpower planning? What is the implication of manpower planning to the training function?

3. What is meant by a training policy?

4. What are some of the important aspects that should be considered in developing a training strategy?

5. Describe and explain what is a training plan?

REFERENCES


TOPIC 3

PROFESSIONALIZING OF TRAINING: ROLES AND COMPETENCIES FOR TRAINERS

OBJECTIVE

To describe the profession of trainer and training manager which includes their roles and competencies that make them as professionals.

CONTENT

* Learning Objective
* Roles of Trainers
* Competencies for trainers
* Required Readings
* Review Questions
* References
TOPIC 3

PROFESSIONALIZING OF TRAINING: ROLES AND COMPETENCIES FOR TRAINERS*

LEARNING OBJECTIVES

For the student to:

1. Identify the major roles for trainers.
2. Identify the major competencies for trainers

INTRODUCTION

Houle (1980) suggested that the first and most dominant characteristics of a profession is that, as many of its members should be concerned with clarifying its function or functions. This is a difficult but a necessary process, so as to give the practitioner’s work its focus and form. To a nonexpert, defining the central mission of a profession seems easy. Thus he would say that an architect designs buildings, a doctor cures the sick, a teacher teaches and a pharmacist prescribes medicine. But to a professional, it is much more complicated.

Similarly, many people look upon the trainer as synonymous with “one who trains”; translated that may “instruct” or “teach” (Chaddock, 1976, p. 1-3). Though instructing is an important function, it is only one of the many roles that an effective trainer assumes.

* Adapted from Abu Daud Silong (1986), Professionalizing characteristics of the training profession in West Malaysia. Doctoral Dissertation, University of Maryland - College Park (Chapter II. Pp 60-71).
ROLES FOR TRAINERS

Lipton and Nadler (1967) identified 3 major roles of a trainer, that is, as a learning specialist, and administrator, and a consultant. Chalofsky and Cerlo (1975) mentioned 4 roles of trainer viz: (1) Learning specialist, (2) consultant, (3) program manager, (4) administrator. A more detailed identification of the trainers function have been developed by White (1979). He listed 9, and these were:

1. Analysing needs and evaluating results;
2. Designing and developing training programs;
3. Delivering training;
4. Advising and counselling
5. Managing training
6. Managing organizational relationship
7. Research
8. Development of professional skill and expertise

In the early 1980s, the American Society for training and Development (ASTD) conducted a study to identify the tasks performed by and skills required by training specialist. One of the findings indicated that there were distinct roles of trainers (Baird, Schneier & Laird, 1983):

1. Evaluator: the role of determining the extent of a program’s process;
2. Group facilitator: The role of managing group discussion and group process;
3. Individual development counselor: The role of helping individuals assess personal competences, values, goals and team spirit;
4. Instructional writer: the role of preparing written learning and instructional material; examples -- exercises, workbooks, worksheets, teaching guides, written proposal, written case studies, scripts (for video, film, audio) and textbooks;
5. Instructor: The role of facilitating learning;

6. Manager of training and development: The role of planning, organizing, staffing, controlling the training operations;

7. Marketer: The role of selling training viewpoint, learning packages, programs and services to target audiences outside one’s own unit;

8. Media specialist: the role of producing software for and using audio-visual, computer and other hardware-based technologies;

9. Need analyst: the role of defining training needs;

10. Program administrator: The role of ensuring that the facilities, equipment, materials, participants and other components of a training event are present and that program logistics run smoothly;

11. Program designer: The role of preparing objectives, defining content, and selecting and organizing activities for a specific program;

12. Strategist: The role of developing long-range plans relating to training structure, organization, direction, policies, programs, services and practices in order to accomplish the mission of training;

13. Task analyst: the role of identifying activities, tasks, sub-task, human resource and support requirements necessary to accomplish specific results in a job organization;

14. Theoretician: the role of developing and testing theories of learning, training and development;

15. Transfer agent: the role helping individuals apply learning after a training program. Although there were variations of trainers' function identified by different people, the indication is that there is central role that has to be accomplished by the trainers. Lawrence Munson (1984) emphasized that every training function should have an overall mission statement with standards of performance to articulate and delineate clearly the kind and utility of overall results to be achieved" (p.36) In training, the central mission is an interrelated set of functions and these have been referred by
Houle (1980) as the conceptual characteristics. More specifically, its main focus is: identifying, assessing -- through planned learning--helping develop the key competencies which enable individuals to perform current or future jobs (McLaganick, 1982, p. 14).

COMPETENCIES FOR TRAINERS

Within this category Houle indicated 4 characteristic related to professionalization of a profession, namely; (1) mastery of theoretical knowledge, (2) capacity to solve problems, and (3) use of practical knowledge, (4) self-enhancement.

Practitioners of every vocation should seek mastery of some knowledge base. “Every profession is a system of applied content, skills and principles based on theoretical areas of the art and science” (Houle, 1980, p.40).

In the field of training the knowledge base is often termed as competency. McLagan and Bedrick (1983) defined competencies as “the knowledge and skills which are key to producing the critical outputs of the training and development field and its role” (p.14). They elaborated:

The competencies are tools individuals bring to their work. Knowing the critical competencies for training and development can help people in and around the field make more effective judgements concerning, selection, development, assessment, human resource planning and career planning.

Smith (1980) reported that the background of trainers as having been teachers, priests, ministers, engineers, entrepreneurs, line managers in big corporations and others. Gordon Lippit (1967) listed psychiatry, general psychology, social psychology, education, political science, anthropology, business administration, public administration, behavioural science,
communications, system theory, information technology, or finance as disciplines that may provide a good base for building a career in training.

Gayeski (1981) after categorizing the roles and competencies of trainers as reported in research, identified four major areas to form a knowledge base for trainers: (1) Management, (2) Training/communication skills, (3) Design and production materials, and (4) Selection and evaluation techniques. The detailed listings are as follows:

1. Management
   a. Budgeting
   b. Public relations
   c. Planning and forecasting needs
   d. Economics
   e. Organizing
   f. Personnel
   g. Facilities administration

2. Training/communication skills
   a. Use of media
   b. Platform skills
   c. Communication theory
   d. Learning theory
   e. Motivation
   f. Interpersonal communication
   g. Client relationship
   h. Public speaking
   i. Writing

3. Design and production materials
   a. System analysis
   b. Objective development
4. Media production
   a. Video (studio and remote)
   b. Photography
   c. Audio
   d. Slide/tape
   e. Graphics
   f. Display
   g. Transparencies
   h. Publication design
   i. Multi-image
   j. Interactive media

4. Selection and evaluation of training techniques
   a. Advantages/disadvantages of presentation format
   b. Research design
   c. Instrument and testing design
   d. Bibliographical tools
   e. Content analysis
   f. Criteria for selecting hardware/software
   g. Cost-effectiveness analysis
   h. Sources for consultants and content experts.

Gayeski (1981) suggested that the core content areas can become the basis of an academic knowledge base in training. ASTD sponsored several studies related to determination of competencies for trainer (Baird, Schneier & Laird, 1980, McLagan & Bedrick, 1981) in 1981, the ASTD Board of Directors directed the Professional Development Committee (PDC) to update the competencies in the field of training and development for use by ASTD, organizations, educations institutions, training and development departments and practising individuals.
After several reviews by experts, they produced a final list of 14 competencies for the training and development field (McLagan & Bednich, 1981, p. 18). These were:

1. Adult learning understanding: knowing how adults acquire and use knowledge, skills and attitudes
2. Audio-visual skills: Selecting and using audio-visual hardware and software
3. Career development knowledge: Understanding the personal and organizational issues and practices relevant to individual careers
4. Competency identified skill: Identifying the knowledge and skill requirements of job tasks and roles
5. Computer competence: Understanding and being able to use computers
6. Cost-benefit analysis skill: Assessing alternatives in terms of their financial, psychological, and strategic advantages and disadvantages
7. Counselling skill: Helping individuals, recognizing and understanding personal needs, values, problems, alternatives, and goals
8. Data reduction skill: Scanning, synthesizing, and drawing conclusions from data
9. Delegation skill: Assigning task, responsibility, and authority to others
10. Facilities skill: Planning and coordinating logistic in an efficient and cost-effective manner
11. Feedback skill: Communicating opinions, observations, and conclusions such that they are understood
12. Futuring skill: Projecting trends and visualizing possible and probable futures and their implications
13. Group process skill: Influencing groups to both accomplish tasks and fulfill the needs of their members
14. Industry understanding: Knowing the key concepts and variables that define an industry or sector
15. Intellectual versatility: Experiencing, exploring and using a broad range of ideas and practices, influence form personal 

16. Library skill: Gathering information from printed and other recorded sources, identifying a 

17. Model building skill: Developing theoretical and practical frameworks which describe complex understand able, usable way 

18. Negotiation skill: Securing agreements while successfully representing a special interest in a decision 

19. Objective preparation skill: Writing clear statements which describe 

20. Organizational behavior skill: Understanding organizations and dynamic, political, economic system which have multiple goals—using this larger perspective framework for understanding and influencing events and change 

21. Organization understanding: Understanding the strategy, structure, power networks, financial positions of a specific organization 

22. Performance observation: Identifying and describing behaviours and their effects 

23. Personnel/HR field understanding: and practices in other HR areas (organizational development, job design, human resource planning, selection and staffing, research information systems, compensation and benefits, collective bargaining, union/labour relations) 

24. Presentation skill: Verbal presentation so that the intended purpose is achieved 

25. Questioning skill: Gathering ideas, individuals and groups 

26. Record management skill: Storing and stimulating insight in easily retrievable form
27. Relationship versatility: Adjusting behaviour in order to establish relationship across a broad range of people and groups.


29. Training and development field understanding: Knowing the technological, social, economic, professional and regulatory issues in the field; understanding the role T & D plays in helping individual learn for current and future jobs.

30. Training and development techniques understanding: Knowing the techniques and methods used in training and understanding their appropriate uses.

31. Writing skill: preparing written materials which follow generally accepted rules of style and form, is appropriate for audience, creative and accomplished its intended purpose.

The competencies described above were determined from comprehensive reviews of more than 20 past studies and formal and informal reviews by human resource and T & D leaders, professors, ASTD officials and ASTD chapter (McLagan & Bedrick, 1981). With those competencies, which form the knowledge base in the field of T & D, the trainers will be able to solve their problems with regard to their training function.
REVIEW QUESTIONS

1. Describe the common roles practiced by trainers in Malaysia
2. Discuss the major competencies required by trainer and training manager in order they can conduct an effective training programs for their organizations.
3. Discuss the ways Malaysian trainer and training manager can improve their competencies.

REFERENCES


TOPIC 4

TRAINING MODELS

OBJECTIVE

To provide a general systematic and integrated concepts related to designing and training programs in order to help improve practices.

CONTENT

* Learning Objectives
* Introduction
* Training Model
* Program Development Models for CPE
* Important Elements in a Training Framework
* Required Readings
* Learning Activities
* References
LEARNING OBJECTIVES
1. To familiarize students with various models for training
2. To help students identify a repertoire of the basic practices related to delivery of training and development

INTRODUCTION
Model is a guide to practice. Even though studies have shown that trainer and training manager rarely used model in planning their training program, they always described what they did in a language similar to a model or framework. A training model represents in its simplified form, selected elements that are important in developing a training program. In another words, training model is a program development guideline consisting of what ought to be done in order to develop a successful training and development program. According to Sork and Busky (1986) program development model is “a set of steps, tasks, or decisions which, when carried out, produce the design and outcome specifications for a systematic instructional activity” (p. 87).

There are dozens of program planning models prescribed in the literature. Some are similar with each other but some are quite different. The differences could be attributed to the various basic assumptions held by the authors. These models are general in nature and are prescribed to be applied in any situation. They are generally designed to be context-free and do not include suggestions for situational adaptations. Some practicing trainers and training managers treated the models with a great deal of skepticism because in work setting there are many
contextual factors such as personality conflicts, political factors, and budgetary constraints that are not considered in the existing training models. However, this does not mean that models are useless, they are always the beacon for practice when the needs arise.

**TRAINING MODEL**

There are numerous program development models or frameworks suggested in the literature. Cerer and Wilson (1994) classified the models into three viewpoints which are the Classical Viewpoint, the Naturalistic Viewpoint, and the Critical Viewpoint. The Classical Viewpoint is based on Tyler’s curriculum development framework which he suggested in 1949. Since then, most of the program planning models use the logic of Tyler’s four famous questions. The questions are: (1) What educational experiences should the school seek to attain? (2) What educational experiences can be provided that are likely to attain these purposes? (3) How can these educational experiences be effectively organized? and (4) How can we determine whether these purposes are being attained? These four questions have been translated into a number of prescriptive steps as suggested in many of the models. The Classical Viewpoint suggests what ought to be done in order to plan a better program and it must follow a stepwise fashion in order to succeed.

The critics of the Classical Viewpoint suggest that in reality practitioners never apply principles to practice problems. They are real people trying to make the best judgments of what to do in a real situation. Therefore, the Naturalistic Viewpoint stresses on the process of choosing among competing alternatives rather than a matter of knowing unambiguously what is the right thing to do in planning an educational program. This Viewpoint emphasizes on the planner’s ability in making good judgments in a specific context and capability in justifying those decisions. One example of Naturalistic Viewpoint is suggested by Houle’s two-
part system of program design (1972). According to Houle (1972), the quality of a program design depends on the "wisdom and competence of the person making the choices" (p. 223).

On the other hand, the proponents of the Critical Viewpoint argue that to make the best judgement you have to understand that education is a political and ideological activity. It is connected to the social justice of a larger society. Program planning is not a technical activity rather it is an ethical and political endeavor. One famous example of the Critical Viewpoint is proposed by Freire (1987) in his book, Pedagogy for the Oppressed. The author suggests that a planner must have a set of moral standards in order to empower people to take charge of their lives through social and political emancipation.

Another analysis of training models is carried out by Sloman (1994) in his book titled A Handbook of Training strategy. The author identified and analyze various training models viz-a-viz:

1. Systematic Model
   a. National standards for training and development
   b. Training Interventions
2. Transition Model
3. The National Training Award Model
4. Training as a Consultancy Model
5. Continuous Development Model
6. The Ashridge Model
7. The Learning Organization Model

PROGRAM DEVELOPMENT MODELS FOR CPE

Continuing professional education is an elaborate form of non-formal education which is as important as formal education. It involves significant amount
of money, time, and efforts especially for business and professional occupations. The continuing education activities range from the simplest form such as an hour lecture to the most sophisticated program involving comprehensive program development and up-to-date teaching materials and audio visual aids.

In his book A New Approach to Continuing Education for Business and the Profession, Philip M. Nowlen (1988) describes three approaches to developing continuing education program. These approaches are: the Update Model, the Competence Model, and the Performance Model:

The Update Model

This model is the most frequently used model in developing continuing education for professionals. It emphasizes on updating information and knowledge of professional and the transfer of technology. The update model usually consists of intensive short-lecture type course accompany with the latest audio visual aids. The model can be traced to the positivism school of thought. As its inherent from the positivism, this model assumes professionals must update their knowledge, skill, and technology to their knowledge base. The update should come from research based scientific knowledge. The update model major emphasis assumes professional at the far end of ‘real’ knowledge.

The advantages of this model include it is easier to develop since no previous analysis required to teach update to professionals which are the passive consumer of knowledge. The model satisfies the hunger of well informed and to keep professional update. The update enrich the knowledge of professionals in their occupation which are constantly changing. Hence the professionals become sensitive to current issues which could be useful in everyday professional practice.
However, the heavy critics on positivism indirectly criticizes the Update Model. Some of the strengths of this model are; knowledge is not solely based on basic science and problem definition which requires problem setting is more critical then direct problem solving. Therefore, this model could not prepare professional to be an effective problem solver. Problem definition which filled with uncertainty, uniqueness, instability and value conflict required soft knowledge rather then hard basic knowledge.

In this model, competency is not develop since the idea is only to inform about new knowledge. Its only a mean not the end. This model rarely deals with professionals attitude, strength and weakness which are very important to develop better competency and performance of professional practice. The update model assumes professionals as passive consumer of knowledge by ignoring professional attributes.

The Competence Model

Competency has become the main concern in professional school and continuing education providers. They are constantly looking at competency as the most important aspect of profession. The Competence Model main concerns is to improve competency of professionals taking into consideration their context and requirements. The model also deals with aptitudes, strength and weakness of professionals that have direct result to competence. It assumes that a competent professional is one who possess enough knowledge and ability to perform with required standard of requirement. In this model, function analysis is the central part accompany by refresher update, critical skills of mind, applied human relations, and new role preparation. The analysis of function or job description is the starting point of this model which lead to the development of professional standard of competence.
Competency has been intensively investigated, as a result within the model emerge three sub-models which are: Seven Competency Model, Practice Audit Model and Alverro Management Competence Model. The Basic Competence Model development process includes definition of roles, identification of role-related competencies, and description of behavioral anchors. In 1981 American Society for Training and Development (ASTD) added projection of technological, organizational, educational, sociological, and political as factors contribute to the Competence Model development process.

One of the advantages of this model is that the model starts with analyzing job description. By doing this important analysis, providers of CPE are equipped with starting point of teaching and learning. The information also will help in the evaluation of learning. In this model competency is treated as knowledge and skill which consists of traits such as attitude, self-schema, and motivation. These traits are very important elements in professional performance.

The disadvantages of the competence model include that the model fail to identify personal affairs competency which is closely related with professional performance. The model also assumes that performance is entirely an individual affair. This is not true because performance also depends on the relationship between the profession and the society and the ensemble of other influences in organizational setting such as the ensemble of peers, subordinates, etc. Another disadvantages of this model is that its focus on defining the knowledge and skill which are required by acceptable performance. However, acceptable performance is changing through time. What is accepted today might not be accepted next time without any deficiency in knowledge and skill.

The Performance Model

The model takes into consideration the complex reality of performance.
There is no way that performance of professional could be changed or improved with single continuing education intervention. In this model, performance is regarded as a function of both individual and ensembles. The model also includes the structure of performance and continuing education interaction with personal and organizational performance. The model also focus on strong factors which influence performance such as baseline knowledge and skill, challenge of new roles, requisite skills in human relations, critical skills of mind, proficiency in self directed learning, individual development progress, organizational developmental balance, the compromise of individual and organization, personal skills, and understanding and coping with the influence of environment and culture.

According to this model, performance consists of two major parts which are cultural influences and individual’s characteristics. In the cultural influences there are factors which influence performance such as history, values, etc. which determine performance expectation, motivation, recognition, reward, and punishment. The culture structure also includes future indicator of performance. Whereas in the individual’s characteristics the influence factors are individual’s attributes, limitations, predispositions, and individual previous social interactions such as drives, needs, etc. The starting point of this model is the guided self-assessment of professional by comparing job analysis with performance standards. This will be the benchmark for identification of needed performance for improvement. The contributing factors from this activities will be analyzed to develop learning agenda for continuing education.

The advantage of this model is that the model is a complete approach of developing continuing education program for professionals. It includes all aspects and factors contribute to performance. The model also deals with the most important aspect of professional practice which is performance as a mean and an end. The model involves rigorous methods of identifying performances which
provide reliable information for the program evaluation to measure the impact and success of continuing education program.

One of the weaknesses of this model is that the model is theoretically sound, however due to its lengthy, time consuming, and costly process the comprehensiveness of this model could not be applied in total, making it another textbook prescription. The model tries to improve superior performance of professionals according to their relevant professions standards. Even though it is important, the performance must also be based on the standard which agreed by the society since the society is the consumer of profession.

Continuing Professional Education and the Improvement of Performance

As argues by Mawby, "continuing professional education should always be related in some fashion to the improvement of performance". The statement is valid and it should be the case. After all professional's performance is the one that matter most to the profession and the society, and continuing education has a major role in achieving that aspiration. Professionals' foundation knowledge and knowledge of other fields related to basic foundation of professional knowledge are changing parallel to development. These knowledge are required by professionals to improve their competency and performance which sometime they are not aware of. Since professionals are out of professional schools, continuing education has the responsibility to improve professional performance. The value of professionals depends on their performance which satisfy and conform with public interests. Performance, which is the most important thing in profession, therefore must be improved.

Professional school only provide basic knowledge and it does not guarantee the superior performance of professional. Its up to the continuing education to improve professional performance and to avoid the static of professional
knowledge. Learning in continuing education setting is more purposeful with the reflection of experiences and actions, therefore the improvement of performance could become more effective through continuing education. Competition, satisfaction of professional ethic and standard, professional accountability, and quest for perfection are the central elements in professionals mind which require improvement of performance. Therefore continuing education for professional must focus on the improvement of professional performance.

IMPORTANT ELEMENTS IN A TRAINING FRAMEWORK

In a study to analyze and describe program planning literature, Sork and Busky (1986) among other things, found that most of the publications emphasize the “how to” rather than the “why” of program development. They also found that the planning steps that are given the most attention are needs assessment, developing objectives, selecting and ordering instructional processes, and designing evaluation procedures. Similarly, Asmah (1994) analyzed 15 training models in the literature. From the analysis she identified eight elements that are required in designing any training program. According to the reviewed models, the elements are:

1. Identifying training needs (87%)*
2. Defining training objectives (73%)
3. Deriving training content (33%)
4. Developing criterion measures (20%)
5. Designing methods and training materials (67%)
6. Conducting training (100%)
7. Monitoring and evaluation (87%)
8. Follow-up and revision (40%)

* Number in parenthesis refer to the frequency the elements are cited in the reviewed models.
The elements prescribed in the training models are the ideal frameworks. However, Pennington and Green (1976) found four major discrepancies when comparing the practice of university-based continuing educators with the models prescribed in the literature. First, training needs analysis was only given a lip-service. It was not done by most of the respondents. Second, in determining the training objective, available resources are not fully utilized. The objectives were not written in the form of what the trainees were supposed to gain. Third, the design of instructions was not based on learner characteristics, desired learning outcomes, time, money, or other available resources. Lastly, there was no comprehensive evaluation being done on the training programs.
REQUIRED READING


LEARNING ACTIVITIES

1. Reflect your own experience or your own observation related to the conduct of training program. List all the possible elements/stages involved in that training from beginning until the end.

2. Then try to illustrate the elements/steps in a diagrammatic form.

   If you have problem in doing the activities, please read the required readings.

REFERENCES


UNIT B

TRAINING NEEDS ANALYSIS

TOPIC 1

THE TRAINING PROCESS

TOPIC 2

THE PROCESS OF TRAINING NEEDS ANALYSIS

TOPIC 3

DATA COLLECTION AND ANALYSIS

TOPIC 4

DETERMINING TRAINING OBJECTIVES
TOPIC 1

THE TRAINING PROCESS

OBJECTIVE

To describe the important elements required in planning and conducting training and development program.

CONTENT

* Planning and Preparation for Training
* Effective Training Strategy
* Required Reading
* Review Questions
* References
TOPIC 1

THE TRAINING PROCESS

LEARNING OBJECTIVE

To enable students identify important factors that must be carried out when planning a training program.

PLANNING AND PREPARATION FOR TRAINING

In Malaysia, activities on continuing education or training is carried out by the training section or HRD department of an organization, private and government training centers, professional associations, universities, or a collaboration with two or more organizations mentioned. Those who plan and conduct training are professionals who require specific knowledge and skills. Consultants, trainers and training managers usually obtain the knowledge and training skills through experience; reading; discussion, or through activities such as courses, seminars, workshops etc; or pursuing academic studies at higher institutions.

A trainer and training manager require knowledge and skill to plan, implement and evaluate the training programs. A training program is the result of careful planning to ensure the need for training exists, the technical contents are covered, methods used are appropriate, and evaluation is conducted to ensure the result of the training. Even though there are many models in the literature to choose from, research show that there is a gap between theory and practice of training program development (Pennington & Green, 1976). A more detailed research that look into the factors that cause the gap between theory and practice of program development is limited. Nevertheless, most literature suggest factors
that might influence practice such as lack of resources, absence of skill, politics, organizational culture and many others. On the other hand, some literatures criticize the models for not taken into consideration the contextual factors that exists in the real work setting (Houle, 1980).

In practice, many approaches have been used in planning a training program. If you have been assigned to be a training manager of an organization, what are the steps that you will undertake to carry out training? A possible answer is that you might have been instructed by the management to plan such a training program. You will therefore determine the objectives of training, arrange the contents and schedule of the program and call the participants. This approach is often used when the problems have been identified by others and the training manager only receives instructions to carry out the training program.

You might also answer as follows: first you conduct training needs analysis then you determine the objectives of training, carry out the training, and finally evaluate the effectiveness of the training program. This approach is more effective because the training section plays a proactive role in making an effort to identify the problems and necessity of the training program before hand by conducting a needs assessment. Training is costly and require vast resources. Careful planning is therefore important in order to ensure all the efforts produce positive results. Training for the sake of training is not rewarding. Training is necessary to prepare an individual for a more challenging future by providing the employee with more knowledge, new skills and attitude and at the same time overcoming problems related to human development.

EFFECTIVE TRAINING STRATEGY

Research by Pennington and Green (1976) and supported by Caffarella (1988) and Cervero (1988) shows that there are many elements that were ignored.
or superficially done by the trainer and training manager in planning a training program. One of these factors is the training needs analysis. Even though the trainer and training manager has stressed the importance of a systematic method of conducting a needs analysis, it is only a lip-service. The needs analysis if conducted at all is only superficial. Another element which is not systematically done is the evaluation of training. The superficial evaluation is only focused on institutional variables and not the learning process itself (Kirkpatrick, 1987). Usually the trainer or training manager will conduct the final evaluation called the “happiness indicators.” Such evaluation is conducted only on the reactions of participants with regards to the instructors’ ability, food, accommodation, management of the training program and the like. What the participants learnt are only assumed rather than overtly measured (Merriam & Caffarella, 1991).

“Effective practice is based on being able to fully understand one’s own planning framework, how to evaluate it and be able to change it when necessary” (Cervero, 1988; p.115). The most important role of the training section is to conduct their training effectively. As mentioned by Cervero (1988), an effective training practice depends on the full understanding of the organizational context where training is conducted and the ability to evaluate and implement change if necessary. Text book models can be used because most are based on empirical research. However, a trainer and training manager must be aware of their limitations. To follow a model without knowing the method of adaptation is not effective. The trainer and training manager in fact “must remain in control of whatever process, principle or pattern he or she finds useful” (Houle, 1980; p. 233).

To carry out an effective training program, a trainer and training manager must also know the elements related to teaching and learning that occur in the
training process, organizational context where training is planned and implemented, and the ethical framework which will be used (Cervero, 1988).
REQUIRED READING


REVIEW QUESTIONS

1. Write on how you should create a training program that you have been assigned to do. What are the steps that you should take and state the reasons for doing so.

2. What are the main factors that must be considered in order to evaluate the effectiveness of a trainer or training manager's training program?

REFERENCES


TOPIC 2

THE PROCESS OF TRAINING NEEDS ANALYSIS

OBJECTIVE
To describe the process of training needs analysis and the issues related to the process.

CONTENT
* Issues in Training Needs Analysis
* How to Do Training Needs Analysis
* Required Readings
* Review Questions
* References
TOPIC 2

THE PROCESS OF TRAINING NEEDS ANALYSIS

OBJECTIVE

1. To enable students understand the meaning of training needs analysis in the context of training and development.
2. To make known to students the necessary steps in the process of a training needs analysis.

ISSUES IN TRAINING NEEDS ANALYSIS

Training needs analysis or training needs assessment is one of the important elements in planning a training program. When asked how to plan a training program, trainer and training manager always mentioned training needs analysis as the first and important step (Cervero & Wilson, 1994). Nevertheless, research shows that this main activity is conducted superficially and in an ad hoc manner (Cafarella, 1988). There are many types of models, frameworks or approaches of training needs analysis in the literature. These models elaborate the method of conducting a training needs analysis in a theoretical form. Some of the models originated from research while others are formed from the basic assumptions of the authors. A model or theory is important and has a close symbiotic relationship with practice. It is developed as a guide for practice and practice is necessary to refine a theory to make it more efficient. Every book that includes a section on training analysis will adopt either one of the theories or models in the literature or formed by the author himself. However, needs analysis should not be overemphasized because it may take more time and resources. Its importance will be reduced if it burdens the organization.
A needs analysis is conducted to determine the rationale of why a training program should be carried out. Therefore, many questions have to be considered that are related to needs. For example, what is need, whose needs should be studied, and what are the effective methods to determine needs. Needs should be fulfilled for security, social, self-esteem and self-actualization (Maslow, 1970). There are many categories of needs such as basic human needs, felt and expressed needs, normative needs and comparative needs (Monette, 1977). In the context of training and development, needs are referred to individual, group or organizational needs which should be satisfied through systematic and planned continuing education activities.

Individual and group training needs refer to the difference between the present level of knowledge, skill, and attitude with the expected standard or what ought to be. The existing difference or gap is considered as a problem that should be overcome. A problem will surface when there is a difference between the present level of performance with the expected or standard performance. This approach of analyzing training needs through gathering and analyzing information collected from the ground is called the bottom up approach. But at times, employees needs are measured through the opinion or observation from the top or senior management of an organization. As a result, employees are directed to undergo a ‘suitable’ training for them. This is a top down approach of training needs analysis.

Individual or group training needs when it becomes rampant and widespread in the organization will lead to organizational problem or needs. Usually organizational needs are due to communication problems among staff, needs for future development, and lack of a precise vision or objective. The needs or problems in an organization could be solved or fulfilled by several methods and training is one of them. Sometimes, there are problems in an organization that
originated from the management or unsuitable standard operating procedure. Without systematic training needs analysis one will never know what is the real source of the problem and how to solve it. For example, lack of work commitment among lower ranking staff in a department could be due to an inconsiderate head of department. If the head department does not aware of his or her own deficiency, he or she might direct the employees to attend motivation training. Lack of work commitment is only the symptom of other problems. If the actual problem is not identified, the training to overcome the symptom will be useless.

If the training has been earmarked as the most suitable method to fulfill the needs of the employees, it must be planned systematically. Sometimes training might be planned in a series of different level of treatment. If the resources are available in the organization training might be done in-house by training department or it might be contracted to independent consultants.

HOW TO DO TRAINING NEEDS ANALYSIS

There are various approaches in carrying out the training needs analysis. You are advised to read more than one approaches. In this course, the approach proposed by Tracy (1992) will be used (please refer to required reading). Tracy suggests a comprehensive bottom up approach where individual and group's needs in organization are the prime concern without forgetting the organizational immediate and long-range development.
REQUIRED READING


REVIEW QUESTIONS

1. Tracy (1992) presents a comprehensive framework of training needs analysis. As a practitioner, how would you adapt the framework to your own situation.

2. Besides training, what are the other approaches that you think would be able to solve organizational needs or problems. Describe the needs or the problems and suggest the alternative approaches to solve them.

3. Describe as many as possible the organizational needs or problem that could be solve through training and development.

REFERENCES


TOPIC 3

DATA COLLECTION AND ANALYSIS

OBJECTIVE

Overview the process of data collection and analysis in relations with training needs analysis

CONTENT

- Introduction
- Method of Data Collection
- Data Analysis
- Required Reading
- Review Questions
- References
TOPIC 3

DATA COLLECTION AND ANALYSIS

OBJECTIVE
To enable students to understand the process of data collection and analysis which are useful in conducting training needs analysis.

INTRODUCTION
Training needs analysis is a scientific method that requires a systematic collection and analysis of data in order to obtain a reliable and valid finding. A conclusion to hold a training program is questionable if a systematic method of data collection and analysis not carried out. Some organizations do not always consider the function of training as important because it does not directly benefits the organization. For example if downsizing is unavoidable, training department or unit will be the first victim. Nevertheless, an organization that recognizes the importance of human resource will place equal importance to the training department with regards to other departments in whatever circumstances. Therefore, the necessity of training must be shown with the support of data or strong evidences. This can be achieved if a training needs analysis is conducted systematically through proper data collection and analysis.

The rationale of why certain training must be carried out must be shown with empirical data and at the same time the advantages of training must be clearly proven. For example, training will increases productivity by 20% because workers become more efficient due to increase in knowledge, skill, and attitude, or fast and accurate decisions can be made after sales personnel acquire more knowledge on
making marketing decisions. To create this rational and advantageous of training, data must be systematically collected and analyzed.

Training needs analysis encompasses three important activities interrelated with one another. Such activities include finding a suitable data collection instrument, determining what type of information or data required, and identifying the method of data analysis. Thus a trainer and training manager must know and have some skills to conduct this simple research. One of the reasons why a training needs analysis is not conducted systematically is because the trainer or training manager does not have the skill to conduct such a simple research. Usually, a detailed proactive training needs analysis is contracted to independent consultant who has the ability to conduct systematic research. However, there are various simple methods in carrying out training needs analysis. For example a simple survey using an interview questionnaire form can collect quantitative data such as type of training required by the employee, their level of knowledge, skill and attitude, the method of training that they are interested in, duration of training, place and the like.

METHOD OF DATA COLLECTION

There are various types of instruments or methods of collecting data for conducting a training needs analysis. The trainer and training manager must know what are the advantages and uses of every method available. Mitchell (1993) suggested the Contingency Model in selecting the method of needs assessment. Some of the methods recommended are:

1. Advisory committee
2. Assessment centers
3. Attitude surveys
4. Group discussions
5. Employee interviews (by trainer or training manager)
6 Exit interviews (by personnel department)
7 Management requests
8 Observations of behavior (by trainer or training manager)
9 Performance appraisals
10 Performance documents
11 Questionnaire surveys and inventories
12 Skills tests

Various factors must be considered first before selecting a method that is suitable for your organization. Every method has its advantages and limitations. Using more than one method is recommended if the organization has the time, money and skills required.

According to Mitchell (1996) there are many sources of information in conducting a training needs analysis. These sources of information are necessary to determine and compare the present work practice with the standard or what ought to be in order to identify the problems or needs. Such sources of information are (1) Management (2) Customers or end users (3) Government (4) Workers and (5) Technology.

Management

Management has many information required for the purpose of a training needs analysis and they are the decision makers of whether training should be carried out or not. Therefore, a trainer and training manager must be closely associated with the management in order to obtain these information. For example, the management might think that their employees require training. This opinion might be from their observations only. However, this opinion should be considered by the training department as a basis for collecting further information.
The information on what are the objectives or hopes of the management in suggesting certain training should also be collected.

The involvement of the management will create more commitment from those involved in the training activity. It is a good strategy to get the management involved in the training. The management will be more considerate towards training if their involvement is appreciated.

**Customer or End User**

Information from the customer or end user is very important in a training needs analysis of an organization. A customer or end user will be able to give information with regards to quality of the products or services that they receive. These information are obtained from the customer or end user directly or through the feedback collected from customer service or complaint department, market research, receptionists, suggestion box, customer survey etc.

For an organization that emphasizes the importance of customer or end user, information from such sources is very important and valuable. This type of organization has its own system to obtain these information directly. These information will be channeled to the trainer and training manager for planning their training programs.

**Government**

Organizations are expected to follow the rules and policies of a state or government. Besides that, organizations are suppose to help the government in achieving its vision. Therefore, up to date information from the government is very important in order to make sure the training not only in line with the rules and policies but also help the government in achieving its vision.
Information from the government can be obtained through public employees responsible for the information, policy makers, official documents, and mass media.

Workers

Involvement of staffs in giving information for training needs analysis is very important especially when the training itself is planned specifically for them. Training must be suitable with the employee and their opinions must be considered. If a training planned does not take into consideration the needs of the employees, for example training is conducted at night during the fasting month, this will create dissatisfaction among the Muslim employees. This training will only cause problems and most probably the real problem will not be solved through such training because of the negative attitude of the participants created as a result of the inappropriate timing of the training.

Other than that, knowledge, skill and attitude of participants can also influence their performance in carrying out their official duties. Such information must always be updated by the training department. Then can only a training department be able to plan their training in a proactive manner that is planning a training before a problem evolves.

Technology

Technology changes very rapidly. To be able to compete in this decade of changing technology, a trainer and training manager must be able to obtain information on the latest technology to plan their training needs analysis of their employees. For example, when a new machine or equipment is bought by an organization, the employee who handles the machine or equipment must be trained adequately. The organization will not allow their employees to learn in a “sink or
swim" or "go out with Ali" method because an unplanned training will take a longer time and the end result of this effect might not be known.

The information required for training needs analysis are varied. It can be in the form of quantitative or qualitative data. Quantitative data consists of information that can be counted while qualitative data consists of information other than quantitative information such as the negative attitude of the employees towards a certain task and the like. To what extent or how far this type of information is needed to conduct a training needs analysis will not be an easy answer. For a big organization, it might need more comprehensive information for their training plans. It can be done because the such organization has vast financial resources, skill and sufficient time to collect and analyze them. Nevertheless, for organization that do not have such a luxury, simple and fast information is enough to carry out a training needs analysis and thus enable them to conduct the training quickly. With proper evaluation plan, training program could always be improved in future.

DATA ANALYSIS

A majority of the raw information collected can not be used immediately. These information must be filtered and analyzed to determine its credibility. The result from the analysis of these information then will show the necessity of a training. Sometimes the result of the analysis will show the problem that can not be solved by training. Then other corrective methods should be considered. By analyzing the information, the organization can differentiate problem which could be solved by training and those who can not.

Mitchel (1996) underlines four types of problems that might evolve from the analysis of information for the purpose of training needs analysis. The first problem is related to external problems beyond the control of the organization.
This problem is termed as a systemic problem. For example, recession occurs in the early 80's is a universal problem that could not be solved through training. The second problem is related with the organization itself. This organizational problem might be due to the policy of the organization or standard operating procedure that is not suitable. As long as the policy and SOP does not change, the problem will continue to exist. No training can solve this type of problem. The next problem is related to motivational. This motivational problem is actually a problem that can be solved by training. The final problem is related to skill and performance. The systematic and continuous training is suitable to resolve this kind of problem.

After data is collected, an analysis must be carried as soon as possible. It is not necessary to conduct a very scientific analysis. For a normal training, a simple statistic is sufficient to analyze quantitative information. For example, to show the number of employees who are not skilled in certain task can be explained in terms, percentage, mean, median, or mode only.

A trainer and training manager must know the important elements in carrying out training needs analysis. They must know the method of collecting data, able to identify the source of information, able to collect information effectively, and able to analyze the information collected and make decisions.
REQUIRED READING


REVIEW QUESTIONS

1. If you are selected to be a training manager in an organization and is instructed to make a work plan in the training department, what are the steps that you must take.

2. State the advantages and disadvantages of planning a reactive and proactive training.

REFERENCES


TOPIC 4

DETERMINING TRAINING OBJECTIVE

OBJECTIVE

To describe the importance of training objective and how to determine the objective in relations with the training program

CONTENT

* Learning Objective
* Introduction
* Content of Training Objectives
* Criteria for Objectives
* Required Reading
* Review Questions
* References
TOPIC 4

DETERMINING TRAINING OBJECTIVE

LEARNING OBJECTIVE

1. For the student to be able to identify some of the problems in writing training objective.

2. For the student to be able to determine and write functional training objective.

INTRODUCTION

Even though it sounds simple, training objective is one of the most important elements in designing a training program that it ought to be correct and functional. Training objective is the heart of training that guides the development of training content, approaches, and evaluation. It is a target or an achievement which "specify the type of change that is expected, when it will occur, and finally, how it will be measured to determine its level of success" (Moss, 1989, p. 27).

Training objective has been taken for granted by many trainer and training manager. The objective has been written in many forms. Some did not related at all with the training at hand and others only stated a general long range objective that was very difficult to achieve in one training session. Training objective should describe what trainees should be able to do at the end of their training that they could not do previously. Trainer and training manager should not confuse between training department goal or management goal with training objective. The former is the statement of purpose limited to describing end results of the whole training function and not limited to specific skill. The later however, is the end result of
It states the end results (not of training, but of learning) by specifying what
skill must be learned, how it will be taught, and how the learning will be
evaluated. Because it describes the means, the end, and evaluative
feedback, the training objective is your single most important tool in
training. Attaining your training objectives helps you to reach your
management goals, so training objectives may be seen as a subset, a series
of intermediate accomplishments which will contribute to the overall
attainment of the larger management goals (p. 46).

CONTENT OF TRAINING OBJECTIVES
Before writing an objective, you must have some information about training
audience, expected behavior, condition of change, and degree of change. This
information is available as a result of your training needs analysis. Knowing these
information you should be able to:
- describe the final results of a training
- be specific and precise
- describe a change that is measurable or observed
- list criteria against which success can be measured or judged
- mention all the essential conditions under which the results can be
  achieved
- specify an end point (Moss, 1989).

In writing training objective you have to choose appropriate words to
describe the expected learning. Moss (1989) identifies some commonly used
behavioral objective words which are:

<table>
<thead>
<tr>
<th>classify</th>
<th>differentiate</th>
<th>identify</th>
<th>prepare</th>
</tr>
</thead>
<tbody>
<tr>
<td>construct</td>
<td>discuss</td>
<td>indicate</td>
<td>specify</td>
</tr>
<tr>
<td>define</td>
<td>distinguish</td>
<td>integrate</td>
<td>state</td>
</tr>
</tbody>
</table>
describe
designate
explain
establish
evaluate
list
practise
name
trace
determine

Besides the above precise words or terms, Tracy (1992) also lists some vague terms which should be avoided in writing training objectives. The problem with vague words arise when you want to evaluate the training impact using objective oriented evaluation.

CRITERIA FOR OBJECTIVES

According to Mitchell (1993) functional training objectives must meet five criteria which are:

1. The action must be stated specifically and in detail
2. The action must be measurable or observable
3. The objective must describe an action the trainee will perform
4. The action must be realistic
5. The action must be given a time frame for completion

These five criteria can be remember easily by arranging them into an acronym:

S Specify
M Measurable (observable)
A Action performed by the trainee
R Realistic
T Time framed

In addition SMART training objective could be more refined by adding two more criteria which are Educational and Revisable. The acronym would become SMARTER.
REQUIRED READING


REVIEW QUESTIONS

1. As a training manager you are responsible to conduct a motivational training for your staff. Write a clear training objectives for the training you about to conduct.

2. Why training objective is important? From your experience, does improperly written training objective is a problem to the training program? Why?

REFERENCES


UNIT C

ENHANCING TRAINING

TOPIC 1
PRINCIPLES OF LEARNING

TOPIC 2
LEARNING STYLE AND TEACHING STRATEGY

TOPIC 3
INDIVIDUAL AND GROUP LEARNING METHODS

TOPIC 4
TEACHING AIDS
TOPIC 1

PRINCIPLES OF LEARNING

OBJECTIVE
To describe some important principles of adult learning associated with training and development.

CONTENT
* Introduction
* Learning in Adulthood
* Principles of Adult Learning
* Required Reading
* Learning Activity
* References
TOPIC 1

PRINCIPLES OF LEARNING

LEARNING OBJECTIVE

For the student to understand some important principles of adult learning that could be utilized to facilitate training and development.

INTRODUCTION

One of the important element discussed in any adult education course or text is the principles of adult learning. The principles are very important since the process of educating adult relies and depends heavily on adults’ motivation to learn in a democratic process. When these principles are applied in a learning situation, adults are more motivated and this results in a more effective learning process. Increasing the motivation of adult in learning is very important since adults cannot be forced to learn something they do not like. If used properly, the principles will contribute towards making adults wanting to learn voluntarily.

Principles are statements of beliefs developed from research or experiences that occur frequently to many people. Principles act as guides that can be used in developing specific strategies in a training program. Adults learning is quite different from how children learn. As adult educators, we have to understand and believe in certain things about how adult learn. We may have our own beliefs about adult learning which are gathered from our experiences working with adults. These beliefs may become our adult learning principles.

LEARNING IN ADULTHOOD

Having prior knowledge of how adult learn in a formal setting could
enhance the effectiveness of any training program. Merriam and Caffarella (1991) argue that a majority of learning in a formal setting such as training most often is instructor-directed or top-down approach despite the awareness of the importance of bottom-up approach in adult education. The important factors that influence learning in a formal setting are people, structure, and culture of the organization.

The challenge for us as trainers and training managers is how to provide the most effective strategy and environment that will provide adult with the most optimum condition for conducive learning. There are many factors that facilitate and inhibit learning in a formal setting. However, not many research has focused on this issue (Merriam and Caffarella, 1991). Sometimes, trainers and training managers have to trust their own experiences in dealing with adult learning.

PRINCIPLES OF ADULT LEARNING

Different authors have slightly different set of adult learning principles. For example, Moore and Waldron (1981) discuss 12 principles whereas, Moss (1987) presents eight different sets of principles. Nonetheless, these statements of believes are important in adult learning. The suggested principles are not to be taken as a whole. As practitioners, we have to adapt the principles to suit our own audience and context. Some principles are only appropriate in certain context and culture while others are more universal.

According to Moore and Waldron (1981) adult learning is voluntary. Adults only learn what they think will benefit them. Under this condition, learning will be most effective if delivered in a conducive manner. Forcing adults to learn something they do not like is disastrous. Enforcement by rules and policies may cause adults to attend a learning situation. However, if they do not like a particular learning experience, they will complain either loudly or silently.
Adult learning is also highly non-institutionalized. Non-institutionalized adult learning is flexible in terms of curriculum, teaching methodologies, and procedures. Adult do not like to learn in a rigid environment. They prefer to participate in the development of learning objectives, the section of subject matter, and the manner in which the subject matter may be learned.

Adult learning is also highly experience related. Adults come to a learning situation with a variety of experiences. If the experience is negative for example a self-concept of a poor learner, this will inhibit learning. In addition, adults like to reflect any learning activity with the ones they have, and if given the opportunity they enjoy and appreciate to relate their experiences.

Adult learning is related to an independent self-concept. Adults have to tune themselves with learning which require self-motivation, self-disciplined, and self-directed. An adult educator does not facilitate adult learning through teacher-centered approach of teaching and learning. They assume that adults have the responsibility to learn without being spoon-fed.

Adult learning is more problem-centered and less subject matter centered. Adults like to learn something that can be used to solve their everyday problems. They are looking for material and techniques that can be used immediately to solve a problem or explain a phenomenon. For example, adults like to learn how to manage themselves, and discover the means of improved communication.

Adult learners come to the learning setting with a variety of orientations. Some of the orientations discover that adult learners are goal oriented, activity oriented, and learning oriented. Neither of these three orientations is mutually exclusive, nor is any one orientation dominant at a particular time. Most likely it is a mixture with one orientation slightly superior than the others.
can be used to facilitate learning in a training group.

5. Learning is an evolutionary process. Changes in behavior require time, and come about gradually. The use of highly structured training methods to impose quick changes in the behavior of learners, is highly unlikely to succeed in bringing about lasting learning.

6. Learning can be a painful process. It is not easy for someone to discard familiar ways of doing things and adopt new behavior, yet as part of the learning process it is often necessary to change old and comfortable ways of behavior, thinking and valuing.

7. The learner is a rich resource for learning. Each individual has experience, ideas, feelings and attitudes which are rich resources for learning. Trainers can extend their own experiences and knowledge by drawing on the learning resources of a training group.

8. Learning is an emotional as well as an intellectual process. Learning is affected by the total state of the individual. People's feelings can interfere with and block communication and learning. A trainer must be aware of such problems and he or she is expected to deal with them if optimum conditions for learning are to be created. The emphasis should be placed on the people rather than the process.

9. Learning is a highly individual and unique process. People should understand the approaches they ordinarily use in their learning, so they will be more effective in learning and problem-solving. Trainers can help them in this.
REQUIRED READING

LEARNING ACTIVITY
As adults we have things that we like and do not like while learning in a training session. From your experience, describe what you prefer in learning. It could be something to do with the subject matter, the facilitator, or the physical environment, and the like.

REFERENCES


TOPIC 2

LEARNING STYLE AND TEACHING STRATEGY

OBJECTIVE
To describe the process and the importance of adult learning and teaching strategies in the context of training and development.

CONTENT
* Adult Learning Ability
* Role of Adult Educator and Nature of Teaching
* Learning Style and Teaching Strategy
* Required Reading
* Review Questions
* References
TOPIC 2

LEARNING STYLE AND TEACHING STRATEGY

LEARNING OBJECTIVE

For the student to be aware of the important of adult learning style and teaching strategy in order to plan and implement successful training programs.

ADULT LEARNING ABILITY

Many adults have engaged in at least one continuing educational activity each year and most adults are involved in their own systematic learning project (Tough, 1979). Research has shown that adults do have the ability to learn and the ability does not decrease with age at least at the age of 50 when the ability starts do decline. Given enough time, suitable training strategies, and enough resources, adult can learn anything (Moore & Waldran, 1981). One of the important philosophy in adult education is that any adult can learn and change if given the opportunity. The ability to learn is measured by intelligence which measured quantitatively by academic abilities. At present research has not come out with any measurement to measure practical intelligence (Merriam & Caffarella, 1991) which is the most important tool used by adults in coping with their everyday lives.

Barrier to adult learning ability seems to hinge on attitude and physical conditions. Some adults have problems in learning because they started the learning project with less favorable attitude. For example, an adult does not like learning because of distasteful childhood educational experiences. Once the attitude has been corrected and becomes more positive, learning turns out to be faster and more interesting. Usually the more successful and rewarding

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educational experiences an adult has, the more successful will be the later learning experiences. Thus adult experience is a useful component of adult learning ability. Physical conditions or health conditions do act as barriers to adult as well as child learning ability. In natural condition, adult’s sight, hearing, and general health conditions become barriers to learning through the aging process. However, some problems could be remedied through the use of proper equipments, medicines, and proper health care.

ROLE OF ADULT EDUCATOR AND NATURE OF TEACHING*

Many adults hesitate to avail themselves of opportunities provided in organized adult education because of images of “schooling” which they associate with education and which seem far removed from patterns of adult life. Adults, like teachers, frequently have only limited models of education upon which to draw. In this topic we will attempt to explore the role of adult educator and suggest how attitudes to teaching, and teaching behavior might be modified to help us develop a more enjoyable and effective adult education teaching styles.

As adult educators most of us will see our role as teachers through our experience as students, and subconsciously we will likely make reference to the models of teaching which we have seen in our teachers. Since most of our formal education has been in the presence of teachers who have been authorities in their own fields, it is tempting, when it comes our turn, to adopt the teaching pattern they used.

Many teachers are most comfortable in teaching when they not only direct the learning activity, but also dominate it. Teaching is often equated with telling.

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* Adapted from Moore and Waldron (1981, p. 54 - 58)
or talking and consequently many teachers think that if they are not talking they are not teaching. Let us examine these two ideas of “direction” and “dominance.”

A teacher should direct the learning situation, since presumably that is why members have enrolled in the course or workshop. They have come to gain from the knowledge, experience and competence of the teacher. Direction is used here in the sense of giving purpose to the learning occasion and providing structure to the various activities so that the learners may achieve their learning goals. Dominance may be defined as those actions by which the teacher or instructor is in active possession of learning time of the students or adult learners. Most formal classrooms build in provision for teacher dominance by seating the participants to face the instructor, who either sits behind a desk or stands to talk to the class as in the familiar lecture method. The expectations are thus reinforced that the teacher will talk and the class will listen and make notes of what the teacher says. Such teacher dominance frequently, although not always, frustrates the learning adults because it keeps them passive.

Considerable research and much effort have been expended on improving the means and materials with which teachers teach. However, if teaching is defined as enabling students to learn then, we are in a “whole new ball game.” For many of us learning has been associated with organized teaching but it is wrong to conclude TEACHING = LEARNING. Teaching is what teachers do as they seek to help students learn; however, learning is what is achieved by the learner. It is both bad grammar and poor education to say “He learned me what I know.” Simply putting information before people does not assure learning. The rod and the cane of earlier days have long ceased to be “instructional aids,” but pushing information at learners no more assures that it will sink in that does the more crude form of pounding it in.
This may seem far removed from adult education and so it should. However, to change long established patterns of classroom practice requires more than mere intellectual assent; it requires a conscious effort to seek alternatives and to put them into practice. One of my first teaching assignments, as a new assistant professor, was to teach a class in Ethics. The students were all working adults attending evening classes for degree credit. Classes were held in two evening shifts, with mine coming in the second slot from 8:30 to 10:20 pm. Those classes were straight lectures with a five minute break somewhere in the middle. I was convinced that my responsibility was to cover the material in the text so that the class would be prepared for the final examination. Two decades later I shudder at the thought of how unsatisfying those long evenings must have been for my adult students, many of whom would face another hour of commuting before being able to retire. The next day they would be up early and on the job as usual.

The role of the teacher, at best, is to facilitate learning (which is what the learner is able to do with the opportunity after the teacher is gone). Teaching is that activity which sets up the conditions to stimulate and help that learning. After an extensive review of teaching methods in British Universities, the Hale Committee (1964) concluded that the aim of a university education is the development of “a student’s capacity to think for himself and work on his own.”

Adult education shares with that statement the recognition that adult learners, as independent persons, need teaching experiences which apply that principle.

What Happens When Learners Learn

In the last section we saw the weakness of assuming that because teachers have taught, students have learned. In this section we will examine the process of learning. Three types of learning are generally accepted as encompassing the array of human learning capabilities. These are intellectual (cognitive) abilities, attitudes (affective), and psychomotor skills (Krathwohl, 1964). Each of these suggests that
a person can learn to do certain types of things, for example:

- We can learn the causes of World War II - cognitive
- We can learn respect for racial minorities - affective
- We can learn to play tennis - psychomotor

While humans respond as whole persons, and these types of learning are intermingled, it has been found that each type of learning tends to be independent in predicting how a person might act in one area based upon action in another.

**Intellectual Activities (Cognitive Outcome)**

Intellectual activities have been referred to also as cognitive objectives. Many people use the term “objective” with a variety of meanings which range from a vague general platitude to a very precise statement which describes what the learner should be able to do or demonstrate at the end of a learning experience. One of the important contributions to clarifying thinking about this activity is the work of Benjamin Bloom and his colleagues who made a detailed analysis of cognitive objectives (Bloom et al., 1956). The following is a brief summary of Bloom’s six categories arranged from the simplest to the most complex.

**Taxonomy of Educational Objectives Cognitive Domain**

1. **Knowledge.** This involves the recall of information which is concrete and has a low level of abstraction. From these bits of information such as dates, names, terms, rules, methods, more abstract principles, generalizations and theories are made. At this level knowledge or recall of theory is what is included. Example: Name the countries in NATO.

2. **Comprehension.** This is the lowest level of understanding and refers to an individual demonstrating comprehension through transforming knowledge or information into another form such as writing a summary, preparing a
graph or making a generalized statement of principle. Example: Write a precis of this chapter.

3. **Application**: In a new situation existing and available information is applied to solve a problem, expand an idea or predict an outcome. Example: How would you start to write an essay?

4. **Analysis**: This involves breaking information or ideas into their component parts for an examination of relationships. Example: Why do some adults drop classes?

5. **Synthesis**: This suggests putting information together into a new form such as writing an essay or creating a short talk. This results in taking pieces or parts and combining them to create a novel pattern. Example: Create a plan for an energy efficient house.

6. **Evaluation**: This involves making judgements about something by comparing components with a standard for making that judgment. Example: Judge the best choir in the competition using tempo, pitch and diction as the principal criteria. Educators agree that rote learning of information and facts, simply to recall or recognize them, is the most difficult activity but the least valuable. The higher order activities require use of the lower categories and it is suggested that the more challenging work is in levels 5 to 6. It is in this type of learning, activity that adult educational programs should concentrate, because it is from this type of activity that adult learners will receive intrinsic satisfaction.

**Attitudes and Feelings (Affective Outcomes)**

Intellectual activities are the mental operations we use in education, but equally important is the mental inclination toward the things we do. This is the area of attitude and feeling. The most important of these objectives, for education, is the incentive or motivation to learn. Attitudes to learning which see it as dull or pointless will result, in all likelihood with adults, in a rapid dropout of course
attendees. On the other hand, if they hold an attitude that “education” is good, no matter how painful or fruitless it appears, they would likely continue to attend courses; their general performance, however, would be more that of a docile child that an independent thinking adult.

We all hold attitudes towards various aspects of life, whether they relate to taxes, government, sex, family, religion, or minority people. Attitudes predispose us to act or think in certain ways and may be so strong that they can interfere with our ability to function rationally and logically in those areas. Attitudes are build up over a long time and are resistant to change, even if new information is available which suggests there is a more desirable way. For example, in a study reported by Beard (1974), it was shown that the attitudes of teachers in a British technical college changed from authoritarian to democratic during a year of training; however, the majority reverted to their earlier views after teaching for one year. Beard suggests that what people may say about a particular concern may alter, but if the way they behave is not changed, their views or attitudes will likely revert to the earlier position.

Previously, it was suggested that to improve adult learning opportunities more is required that mere intellectual assent; that adults are not children and that adult education is not schooling. Powerful patterns of behavior pull us back to the security of what we have experienced, inadequate as that may have been. Changes in attitude come slowly and require the reinforcement which comes from the experience of actually changing the way we do things.

Teaching procedures which allow the learners to actively engage in examining the attitudes they hold will be more useful than procedures which merely provide information or tell them what a desirable attitude might be. Unfortunately it is only quite recently that educators have begun to give serious
attention to defining affective outcomes. Krathwohl and his associates (1964) have defined these outcomes under the following headings:

Receiving - Awareness of others, willingness to receive information.
Responding - Willingness to respond, satisfaction in responding.
Valuing - Acceptance of a value, preference for a value, commitment to a value.
Organizing - Conceptualizing a value, organizing a value system.
Characterization by a Value or Value Complex - A student acts consistently in accordance with his values so that the values become part of one's personality.

Skills (Psychomotor)

These skills involve some physical activity which is over learned, in the sense that while its operation can be intellectually recalled, examined, described and analyzed, it has been so well practiced that a pattern of proficiency results. Learning to sew, to paint, to carpenter, to weld, to drive or fly, to swim or sail, all involve the acquisition of a sequentially organized pattern of actions which are required for the skill to be performed. One may know the principles of rules of a particular task, but being able to do it is the measure of psychomotor skill.

Psychomotor tasks, seen as a whole, are very complex activities involving many components and a mastery of each element as well as knowing or remembering what to do next. Athletic and recreational activities are areas in which psychomotor learning is the principle outcome.

LEARNING STYLE AND TEACHING STRATEGY

Learning in adulthood is not well researched. It is a complex and idiosyncratic phenomena which make it even difficult to generalize. Nevertheless, as trainer and training manager we should be aware of some general adult learning
process found in the literature or from our experiences dealing with adult. Central
to the process of adult learning are areas of study such as memory, cognition, and
learning styles. Merrinam and Caffarella (1991) has summarized some of the
important studies in those areas which are interconnected with one another.
According to the authors, there are other factors affecting learning in adulthood
such as social and cultural context that need to be examined. What is really needed
is the interdisciplinary study to reveal the holistic adult learning process in order
to develop more effective adult and continuing education programs.

Because of the experience and maturity adults have, they learn differently
compare to children. The learning style of an adult is the way where information,
and feeling are perceived, organized, and processed, in a learning situation. The
learning style depends on the learner and the learning environment (Hiemstra &
Sisco, 1990). In the context of training and development, trainer and training
manager can enhance the training program by providing proper learning
environment which suit the adult learners. One of the way is through the design
of teaching strategy.

One of the way to know adults learning style is through the use of learning-
style inventory. Both learners and instructors need to know their strengths and
weakness in learning so that improvement can be made. In general, training
strategy does not cater to any particular learning style. In terms of teaching
technique, adult educators normally used different teaching method to capture the
attention of wide variety of adult. Study has shown that 83% of the time adult
learn by sight, 11% by hearing and 6% by other senses.

Teaching Strategy

Teaching strategy includes selecting and sequencing content, choosing a
delivery system, and selecting and using training strategies and media. Selecting
and sequencing content will be dealt in this section whereas the later topics will be discussed in Topic 3 and 4 in the next sections.

In any teaching and learning situation, a lesson plan is a must. Without this guide, an adult educator will find difficulty in focusing the teaching content and approach. In preparing a lesson plan or selecting and sequencing content consist of two steps. First, examine what is the objective of the particular teaching. Is it a change in knowledge, attitude, or performance. Second, arrange the teaching points and learning activities in a manner that is suitable for the learners. Tracy (1992) provides a detailed description of this process. Please read the required reading.
REQUIRED READING


REVIEW QUESTIONS
1. Why is it important for a trainer and training manager to know the process of learning in adulthood?

2. What is the connection between the process of adult learning and the training or teaching strategy?

REFERENCE


TOPIC 3

INDIVIDUAL AND GROUP LEARNING METHODS

OBJECTIVE

To describe several techniques and strategies in helping adult learn in training and development system.

CONTENT

* Selecting method
* Individual learning patterns
* Group methods
* Mass methods
* Required reading
* Review questions
* References
TOPIC 3

INDIVIDUAL AND GROUP LEARNING METHODS

LEARNING OBJECTIVE

At the end of this topic, student should be able to describe the use of individual and group learning methods in training and development.

SELECTING METHODS

There are many methods and techniques of teaching. Each of them has its own advantages and disadvantages. Knowing how adult learn, trainer and training manager can choose a combination of methods to achieve given learning objective. According to Moore and Waldron (1981) there are several factors to consider when choosing the appropriate method in facilitating adult learning. The factors are:

1. The nature of the aims and objectives
   Some method are suitable for giving information whereas others are suitable for changing attitude, problem solving, or creating ideas. Group lecture is used to disseminate information whereas methods which encourage group participation and involvement are suitable for exploring concepts, changing attitudes and feeling.

2. The nature of the subject matter
   If the subject matter is dealing with skill then the best method is individual which allows demonstration, practice, immediate feedback, and correction. However, individual method is costly and time consuming. If the subject matter is one requiring cognitive change such as knowing and understanding, group and mass methods are the most suitable. Group
method is also suitable to subject matter requiring affective change in attitudes, values, morals, and feelings.

3. The availability of facilities
   Each teaching method requires some form of facilities. Group and mass method requires space according to the size of the group. Mass method which uses distant learning on the other hand requires equipment such as computer, radio, cassettes player, and accessibility to mail service. Accessibility to the actual situation is also important in adult learning since adults like to learn by seeing the 'real things.'

4. The nature of the learner
   This factor consists of issues ranging from where the learners are located, how much time they have or can afford for learning, their educational background, physical conditions, and their learning styles and abilities. For example, if the learner is working full-time and located far away from the instructor or if the learner is handicapped, individual teaching method via independent learning or through mass media is suitable and economical.

5. The policy of the institution
   The bottom line for many educational institution is related to costing. Institution always consider the cost of providing certain training method. Therefore, costly method is not desirable even though it is effective.

INDIVIDUAL LEARNING PATTERNS
   This is the 1:1 teacher - learner interaction. Some critical knowledge and skill need to be taught and supervise individually. For example in medicine, a doctor after being expose to the CPR technique needs to practice and supervised individually by a trained instructor. Also an airplane trainee pilot needs to learn
the critical techniques by himself with the help of an instructor. Individual method requires closeness between instructor and learner. It requires openness, trust, honesty, and support.

There are several individual learning methods which can be used. Some of them are:
* Independent study (correspondence)
* Apprenticeship
* Internship
* Tutorial
* Guided individual study
* Computer-assisted learning

Independence study is one of the popular method for distance education without personal face-to-face interaction. Some of the techniques used in this method are printed module, videos, audiotapes, filmstrips, interactive computer disk, and video conference. The advantages of this method are: learners can learn at their own pace and time and need not to come to class. However, independence study requires adults to have high motivation to learn and feedback for learning is delayed because of the distance.

Apprenticeship is basically learning by doing or on the job training. Learner will be supervised and taught as he or she do the actual work assignments. This method is useful in teaching and learning new skill or performance. Learners have to master a particular new skill before moving to a new one. In a sense, this is a slow but effective teaching and learning technique if planned carefully by the instructor.
Internship is quite similar to apprenticeship except that the learners have been exposed to some background or theoretical aspects of the subject matter. Thus it is a form of practicing and applying previously learned concepts to real-life working situations. Learners have to learn the practice individually and of course supervisors are available for confirmation and correction.

Tutorial is ‘coaching’ what the learners do not understand or unable to master the skill taught in previous group session. Here, learners can apply what they have learned and receive immediate feedback to correct any mistakes made on the spot. Unfortunately, not many agency or adult can afford the luxury of one-to-one tutorial session because of the high cost involved.

Computer-assisted learning on individual basis has become common in many formal learning situation. Basically learners learn by interacting with a computer program. Even though the program has been made more ‘friendly’ it is still lack of human touch. The computer and the program only provide artificial empathy to learners. The program does not really understand the learners problem in learning.

GROUP METHODS

Many adults like to learn in group because they can share experiences, meet new people, changing ideas, and learn from one another. Adult educators have to be prepared in order to manage the participation from the audience. This method is being used extensively because it can be efficiently utilized and simply one of administrative ease. Adults most likely are willing to come to a group learning situation and it is easy to find a good facilities. Some of the techniques used with the group method are:
**Small Group (5 - 35 people)**
- Lecture
- Brainstorming
- Case Study
- Question Period
- Field Trip
- Buzz Session
- Role Playing
- Panel Discussion
- Seminar
- Workshop

**Large Groups (35 - 200 people)**
- Lecture
- Panel Discussion
- Conference
- Symposium
- Group Discussion
- Workshop

Some of the group methods are instructor centered but some require participant involvement. The instructor becomes a leader, guide, organizer, resource provider, and also learner. Each technique has a particular value in helping adults learn and also has certain advantages and disadvantages. The selection of any particular technique depends on the learning objective, the nature of the subject matter, the facilitator’s and the group’s experience in using the technique, the size of the group, and the amount of time available.

**MASS METHODS**

The mass method such as the press, radio, and television have become more important forms of adult instruction. Without knowing it many adults have learned from listening to radio while driving to and from office, while watching television at home, and when reading articles in printed material.
REQUIRED READING


REVIEW QUESTIONS

1. Which teaching method do you like best and why?

2. As trainer and training manager how could you use mass method in conducting a particular training program?

REFERENCES

TOPIC 4

TEACHING AIDS

OBJECTIVE
To describe some important devices that are useful in helping adults learn in a training program.

CONTENT
* Introduction
* Selection of teaching aids
* Devices that help in teaching and learning
* Required reading
* Review questions
* References
LEARNING OBJECTIVE

For the students to have an awareness of the wide range of devices that are useful in helping adults learn.

INTRODUCTION

Adults learn by doing, by experiencing, by seeing, by hearing, by touching, smelling and tasting. Different adults may differ in using their senses to learn. Training should make the full use of these senses in order to enhance adult learning. Teaching aids, devices, or media are designed to help learning and they do not teach by themselves. Trainer and training manager should know how to use these devices to help adult learn.

Most media are used to help explain, and to help people visualize something that will help in remembering and understanding. Sometimes the instructor can not bring together the real things to learners in a learning situation, therefore devices are used as substitute.

SELECTION OF TEACHING AIDS

The planning of using teaching aids is made after the specification of learning objectives, and after the designing of learning experience through the selection of methods and techniques (Moore & Waidron, 1981). If we are not aware of this systematic approach to learning, we might start planning the learning experience around the teaching aids that we already have in mind. This is a classical example of putting the cart in front of the horses.
In choosing teaching aids or media, trainer and training manager should remember several factors such as:

1. Learner Characteristics
   There is no use in using media that the learners do not understand. Learner must have literacy in the language and familiarity in the techniques used by the media. They must be ready and acclimatized to the use of a particular device. For example, some learners are intimidating in the presence of closed circuit television cameras and feel pressure to perform in such a situation.

2. Learning Setting
   Learning setting dictate whether a particular media can be used or not. Adult educators should know some basic information of the setting such as the number of learners; the size of the room; the capability of the room to be darkened; the acoustical quality of the room; the availability of a power source; the arrangement of classroom furniture; the presence of built-in device; and the like. Some devices are more adaptable then others under a variety of conditions.

3. Portability
   Some device are not portable or build-in into the classroom. Audio visual device such as OHP should be portable and can be carried out by one person. When educators see device as burden to them they will not use it. The portability design of the device is one of the factor for a device to be widely accepted by instructors.

4. Versatility
   Can a device be used in a variety of ways such as to provide information, to encourage discussion, and to question attitudes? It should be also versatile for use in a variety of locations.

5. Reliability
   Equipment breakdown is one of the fear facing instructor while teaching.
Some devices are easy to maintain and repair while others are too complicated for the ordinary instructor. For example, many OHPs have extra bulbs in the machine itself and in the carrying case and it does not require a technician to put the bulb.

6. Complexity
Device should be simple to use. Complex devices require more time and expertise. If a device is simple to operate, and the media are simple to design, adoption will be quick.

7. Made-to-Measure vs. Ready-Made
Ready-made visuals are made for mass usage. Made-to-measure visuals are more accurate in communicating what you want to say. The most useful audio visual aids are those which you help to design or created by yourself. For example slides, transparencies, and posters can be design to suit your purpose. Ready-made film sometimes does not reflect exactly what you want to convey, it may be too long or too elaborate.

8. Availability
Most classrooms have white or black board. Some equipped with OHPs and screens. More complex device are difficult to find. Not many classrooms have video tape or television.

9. Economic Factors
Rich teaching organization can afford expensive equipments and teaching aids which is good for impression but media and devices do not have to be expensive to be effective. The cost of buying and producing audio visual aids are factors to be considered in choosing the devices.

D. DEVICES THAT HELP IN TEACHING AND LEARNING
* Black or Whiteboard
* Overhead Projector
* Flip chart
* Felt Boards, Velcro Boards, and Magnetic Boards
* Slide Projector
* Film Projector
* Video Player and TV Monitor
* Tape Recorder
* Telelecture
* Radio and Television
* Cable Television
* Computers
* Models
SUGGESTED READING


REVIEW QUESTIONS

1. Choose three devices that help in learning and explain their advantages and disadvantages.
2. Why in practice trainers are not using a variety of media to help maximize adult learning?

REFERENCES

UNIT D

EVALUATION OF TRAINING

TOPIC 1
REASONS FOR EVALUATING

TOPIC 2
THE FOUR LEVELS OF EVALUATION

TOPIC 3
EVALUATION STRATEGIES AND METHOD
UNIT D

EVALUATION OF TRAINING

OBJECTIVE
1. To enable students to understand some of the basic concepts related to evaluating training programs.

2. To provide students with the skills related to evaluating training programs.

CONTENT
* Introduction
* Reasons for evaluating training programs
* The four levels of evaluating training program
* Evaluation strategies and method
* Review Questions
* References
INTRODUCTION

Evaluation is an important element in both theory and practice of program and policy development in the field of adult and continuing education. A majority of program planning literature analyzed by Sork and Busky (1986) and planning viewpoints described by Cervero and Wilson (1994) advocate some form of evaluation as part of the planning framework or model. In earlier studies designed to examine and describe program development processes in six professions, Pennington and Green (1976) found a general program planning model which also contained evaluation as one of the required categories.

Integral to program development, evaluation is used as a means to judge the worth of ongoing programs and the efficacy of modifying the programs, assessing the utility of new programs, improving program management, and satisfying accountability requirements (Rossi & Freeman, 1993). Evaluation also initiates and closes the cycle of program planning by providing useful feedback to evaluation stakeholders (Boone, 1985). In addition, a well-designed evaluation will document accomplishments, account for resources and compliance with policy, identify future needs and priorities, ascertain collaboration and coordination with other agencies, and identify program weaknesses (Grotelueschen, 1980).

Previous research literature has demonstrated the importance of evaluation both in the program planning process and in the improvement and success of a program. As a result, experts suggest more than fifty program evaluation models.

that can be used by evaluation practitioners in their field (Steele, 1989). However, research on evaluation practice shows significant differences between practice and theory. One of the explanations for this gap is that most of the program evaluation theories and models have little relationship with practice (Steele, 1989). Theories and models are general prescriptions that do not adequately tell the practitioners how to adapt them to their own situations.

**Evaluation Theories and Models**

There are many different program evaluation theories and models found in the literature. Theorists hold varied basic assumptions that determine the theory and model they suggest (House, 1978). Most of them focus on and advocate the use of formal, systematic, and sometimes comprehensive program evaluations in order to make the full use of evaluation advantages (Stufflebeam & Shankfield, 1985), even though they realize the reality of situational constraints involved in evaluation practices. These theories and models are general in nature and are prescribed to be applied in any situation. They are generally designed to be context free and do not include suggestions for situational adaptations.

Formal and systematic evaluations are congruent with the belief that evaluation is a special kind of applied social science research (Patton, 1990; Levin, Solomon, Hellstern, & Wollmann, 1981). As a scientific inquiry, evaluation has to be formally planned to make it a part of the program development process. That is, the evaluation plan must be well crafted in advance just as the initial process of program development is. Evaluation has to be consciously planned and implemented as opposed to being a result of quick intuitive personal judgments. Proper planning will ensure that the evaluation approach is conceptually in line with program concepts and theory and that relevant data will be collected at designated times and from predetermined sources. By planning evaluation in advance, stakeholders can be assured that evaluation results will be useful later on.
This will encourage stakeholders to prepare and use the findings in order to make decisions about the program. In addition, evaluation plans will help adult educators avoid "a common problem: answering questions that no one is asking" (Grotelueschen, 1980, p. 94).

The systematic aspect of evaluation refers to how evaluation has to employ data-based social research approaches (Patton, 1990; Rossi & Freeman, 1993). It requires that the evaluation process be carefully planned and conducted, using proper research procedures to collect and analyze the data in order to provide reliable and valid conclusions. The proper use of social research procedures "entails rigorously gathered findings and effective communication" and also deals with "the complex areas of epistemology, rules of evidence, information sciences, research design, measurement, statistics, communication, and some others" (Shufflebeam & Shinkfield, 1985, p. 8).

In addition to evaluation being formal and systematic, there are also prescribed evaluation theories and models in the literature that advocate the use of a comprehensive approach to program evaluation (Rossi & Freeman, 1995; Patton, 1986; Shufflebeam & Shinkfield, 1985; Rein, 1981; Scriven, 1967). This approach encourages evaluation of the program as a whole through interrelated evaluation activities and the proper use of evaluation results. Comprehensive evaluation also requires the examination of why the program failed or succeeded, as well as the reporting of unintended negative consequences. Every important phase of the program ought to be evaluated in order to provide more meaningful and useful findings.

A comprehensive evaluation will ensure that any midstream changes to any aspect of the program will be taken into consideration in drawing the conclusions. Rossi and Freeman (1993) suggest that comprehensive evaluation incorporates
three sets of activities: (a) examination of concept and design of the program; (b) monitoring of program implementation; and (c) assessment of program effectiveness and efficiency. Similarly, Renn (1981) suggests the evaluation of four programmatic units as components of a comprehensive evaluation. These units are what the program is, what it does, what results these inputs yield, and through what processes these outcomes emerge. Other examples of comprehensive evaluation approaches as described by Stufflebeam and Shinkfield (1985) are Patton’s utilization-focused evaluation, Scriven’s summative and formative evaluation, and Stufflebeam’s Context, Input, Process, and Product (CIPP) evaluation.

Most evaluation theories do not fully discuss the importance of context in evaluation. The models which derive from the theories are only emphasized and focused on formal, systematic, and comprehensive aspects of evaluation. They do not show how evaluation practitioners could incorporate the contextual factors in order to conduct effective evaluation.

Program evaluation theories and models are more critical in the applied field of adult and continuing education. It has been an important issue for several decades (Sork, 1984). Even though it is mentioned frequently in the literature, program evaluation is neither extensively treated in program planning literature (Sork & Busky, 1986) nor in the administrative literature in the field of adult education (Courtenay, 1990). As a result, many adult educators have to look at evaluation theories and models developed in other educational and social programs (Steele, 1989).

Few evaluation models or frameworks are designed to suit the adult and continuing education field. Even though the few existing models take into consideration the context of the field, they are also general in nature and imply the
use of formal, systematic, and comprehensive approaches. For example, Grotelueschen (1980) suggests that adult educators should consider the total program variables in doing evaluation. He proposes four evaluation perspectives which include a program’s goals, designs, implementation, and outcomes. Similarly, Cervero (1988) suggests a framework of evaluation questions for the continuing professional education field. The framework consists of seven questions organized around the following criteria: program design and implementation; learner participation; learner satisfaction; learner knowledge, skills, and attitudes; application of learning after the program; the impact of application of learning; and program characteristics associated with outcomes. In addition Steele (1989) suggests evaluations that facilitate utilization; multiple perspectives, needs, models, and methods; and broader evaluation standards.

The importance of considering the contextual factors in adapting evaluation theories and models into practice is mentioned by a few authors such as Steele (1989), Cervero (1988), and Brookfield (1986). It is up to the evaluation practitioners to realize these factors in order to adapt any theories or models. Cervero (1988) concludes:

Evaluation problems...are encountered in situations that are characterized by uniqueness, uncertainty, and value conflicts. By using the examples, images, and understandings from their repertoires, continuing educators can determine the evaluation problems to be solved as well as how to solve them. (p. 148)

In sum, program evaluation theories and models which are context-free and advocate the use of a formal, systematic, and comprehensive approaches to program evaluation are designed only as guides for general situations. They must be properly adapted to the contextual situation before they can be of any significant use. The proper use of theories and models prescribed in the literature
will act as "a dynamic, positive force for enhancing programs and for increasing 
understanding of effective education of adults rather that turning it into a sacred 
cow, a product for export, or an amulet worn to ward off evil spirits" (Steele, 
1989, p. 20).

Questions to Answer Before Doing Evaluation
1. What is quality training?
2. How training program is currently measured?
3. Why evaluate training program?
4. Why minimal evaluation?

REASONS FOR EVALUATING

Evaluation is a very important and an essential process in the planning and 
implementation of an effective training program. Schriven (1967) suggests two 
types of evaluation which are ‘summative evaluation’ and ‘formative evaluation.’ 
According to the author summative evaluation is carried out in order to make 
decision whether to continue or terminate existing program. On the other hand 
formative evaluation is a process of making suggestions on how to improve future 
programs. According to Kirkpatrick (1994) the main reasons for evaluating 
training program is to improve future programs, to decide whether a program 
should be continued or terminate, and to justify the existence of training unit and 
personel. In doing so every steps of training system must be scrutinized. As 
suggested by Kirkpatrick (1994) there are 10 steps in planning and implementing 
training program which are:
1. Determining needs
2. Setting objectives
3. Determining subject content
4. Selecting participants
5. Determining the best schedule
6. Selecting appropriate facilities
7. Selecting appropriate instructors
8. Selecting and preparing audiovisual
9. Coordinate the program
10. Evaluating the program

Comprehensive evaluation will access all phases of program development including the context, input, process, and product (CIPP).

**Required Reading**


**THE FOUR LEVELS OF EVALUATION**

As suggested in the literature there are many evaluation models. The classical model which is commonly used by many evaluators is the Kirkpatrick’s Four Levels of Evaluation. In order to evaluate the whole training system Kirkpatrick (1994) suggests four types or levels of comprehensive evaluation.

Level 1 - Reaction
Level 2 - Learning
Level 3 - Behavior
Level 4 - Results

**Required Reading**

Please read Kirkpatrick (1994) chapter 3: The Four Levels: An Overview
EVALUATION STRATEGIES AND METHOD

Guidelines for Evaluating Reaction

1. Determine what you want to find out.
   * Determine reactions of subject/content, trainers, facilities, scheduling, meals, support services, materials, exercises, etc.

2. Design the questionnaire that will measure the reactions.
   * Open-ended questions, multiple-choice
   * The rational is to get maximum information that requires the minimum time to complete the questionnaire.

3. Get written comments and suggestions.
   Usually the questionnaire will illicit quick and short responses completed at the end of the program. Besides getting those responses, the questionnaire should include portion that would provide written comments and suggestions. Provide adequate time for them to write those comments.

4. Get 100% responses.
   The best way to get 100% responses is to get the participants complete the questionnaires before they leave the program. If the participants are requested to take the questionnaires home, this will reduce the chance of getting 100% responses. But if this unavoidable, it is necessary you send out a follow-up to increase the chance of getting good responses.

5. Get honest responses.
   Getting honest responses is important in any evaluation. To ensure honest responses it is necessary to make sure that the information of individual responses are kept confidential. If necessary, the identification space should be optional.

6. Develop acceptable standards.
   Measurement of items or variables in an evaluation questionnaire should follow an acceptable standards. For example, the measurement can follow the Likert's five-point scale.
Excellent = 5, Very good = 4, Good = 3, Fair = 2, Poor = 1
Strongly Agree = 5, Very good = 4, Neutral = 3, Disagree = 2, Strongly Disagree = 1

For each item multiply the number of responses by the corresponding weightage and add all the products together. Then you divide the sum by the number of responses received. Based on those calculations the rating of item 1 is 4, item 2 is 3.8, and item 3 is 4.0 (See Appendix 1).

7. Measure results against standards and take further action.
   Measure the results against the standards that have been set. If the results fall below the standards then several actions can be taken. For example – make changes in the instructors, contents, facilities, activities, etc. and make suggestions for improvement.

8. Communicate the results of evaluation to those involved in the training for examples the training department, the sponsoring agency and the instructor. However, you should see the appropriateness, such the frequency of reporting and also in what detail would the results be communicated.

Guidelines for Evaluating Learning

Evaluation of learning in a training program concentrates on four level (KASA):

* Knowledge that has been learned
* Attitude that have been changed
* Skill that have been developed
* Aspiration that has been gained

Evaluation of learning is very important because no new behaviors will be expected unless one or more of the learning objectives related to changes in KASA has been achieved.
The guidelines for evaluating learning are as follows:

1. Use a control group as used in an experimental setting. In the social sciences, unlike in the case of the hard sciences, the use of a true control group is often complicated. However, in the case of evaluating training program, the control group are those who do not receive the training. The utilization of a control group is to gather evidence that change has taken place due to the training.

2. Evaluate KASA
   Evaluation of KASA is usually done by conducting a paper and pencil test. For example, a pretest and a posttest can be conducted in a training program and scores from the control and experimental group can be tabulated. Then the net gain can be calculated to indicate the change (See Appendix 2).

3. Get 100% response.
   Get everybody in the group to participate. Otherwise, different design has to be used and a sampling technique is necessary.

4. Take appropriate action.
   Based on the results several actions can be taken, especially that relates to the improvement of training methodology in developing the KASA.

Guidelines for Evaluating Behavior

Evaluating behavior aims at establishing the change that has taken place as a result of attending a training program. In evaluating behavior you have to wait for the participants to apply the learning that has occurred. It may or may not happen immediately. Therefore the decisions when to evaluate is crucial in evaluating behavior.

The guidelines for evaluating behavior are as follows:

1. Use a control group if possible.
   The utilization of a control group can provide a stronger evidence that
change in behavior has occurred.

2. Allow time for behavior change to take place.
   Allow adequate time for participants to apply the learning that has occurred. The opportunity for application may vary from situation to situation. For some programs, it may be two to three months, for others it may be six months or more.

3. Evaluate both before and after the program.
   When possible, evaluate both before and after the program. By doing so, we can compare the behaviors observed before and after the program i.e. the change that has occurred. If not possible, then we can gather data after the program has been conducted to indicate the behavior that were different as a result of the training. Data can be gathered from those who can observed the change in behavior (for example - immediate supervisors).

4. Data collection.
   Data should be gathered from those who can provide the necessary information. They can comprise of one of the following: the trainees, their immediate supervisors and others who can observe those behaviors. For data collection a survey or interview can be conducted. The method used depends on the time available, resources and expertise at hand (See Appendix 3 and 4).

5. Get 100% response or a sampling.
   If possible get the response of all trainees and those involved with the training program. Otherwise, if not practical, then a sampling has to be conducted.

6. Repeat the evaluation.
   Since there is no standard time period that the trainees would change their behavior, it is important that the evaluation is repeated at appropriate time. You should allow two to three months for the trainees to apply their learning before conducting the next evaluation. A third or fourth evaluation
can also be conducted, depending on the circumstances.

7. Consider cost versus benefits.
   In conducting the evaluation you should compare the cost of evaluation and the benefits that could be derived from the results of the evaluation. The cost of evaluation can include the resources and staff time that are needed to conduct the evaluation or the cost of hiring outside experts to do the job.

Guidelines for Evaluating Results

Evaluating results is looking at the impact that a training program has on the organization. Some of the aspects that can be examined include improvement in quality, increase in productivity, reduction in turnover, improvement in quality of work life, improvement in interpersonal communication and human relations, increase of saving or reduction in cost, return on investment for all the money spent on training, etc.

This last level of evaluation addressed the question; What final results were accomplished contributed by the training program?

The guidelines for evaluating results are as follows:
1. Use of control group where possible
2. Allow time for impact to occur
3. Measure impact both before and after the program
4. Repeat the evaluation
5. Consider cost versus benefits
6. Gather adequate evidence of proof is not possible

Required Reading

**SUMMARY**

1. The three major reasons for evaluating are:
   * To improve future program
   * To determine whether a program should be continued or dropped
   * To justify the existence of a training department

2. The four levels of evaluation are evaluation of reactions, evaluation of learning, evaluation of behaviors, and evaluation of results.

3. Evaluation of reactions (level 1) is a measurement of customer satisfaction. It is important and involves the measuring of responses or reactions from the participants, tabulating the responses, analyzing, communicating the results, and taking appropriate actions.

4. Evaluation of learning (level 2) is measuring the change in KASA. It is usually conducted by a paper and pencil test using the pretest and posttest design.

5. Evaluation of behaviors (level 3) determine the change in job behavior which occurred because of the training program. In conducting the evaluation you may use a control group, an interview or survey and repeated measurement in order to ensure the behavior is the results of the training program.

6. Evaluation of impact/results (level 4) aims at gathering adequate evidence to show that the training has an impact on the organization, especially that provide tangible results. To show good evidence the evaluation should use a control group. Get 100% response and conduct repeated measurements if possible.
REVIEW QUESTIONS

1. List all the possible reasons for evaluating training programs.
2. Describe in your own words the four levels of evaluation. Illustrate your description with real examples.
3. Define: evaluation, formal and informal evaluation, formative and summative evaluation.
4. Describe the methodologies that can be used for evaluating training programs.

REFERENCES


Chapter 17

issues in Training

This final chapter provides a perspective on some of the issues discussed earlier in the book and delineates the potential training holds as a career in the next decade because of those issues. The major issues include the changing nature of the work force, with fewer and fewer competent entry-level workers at a time when jobs require more and more skills; the growth and proper role of technology in training; the distinct roles of "soft" management training versus hard-core skills training; and the impact of the new European Community and the newly democratized countries of the former Soviet Union and the Eastern Bloc.

The Changing Work Force

The broadest issue, from which spring many of the others, is the depth of change in the work force, in the technologies of work, and in the marketplace that is predicted for the next decade into the twenty-first century. The most often cited authority for these changes is an in-depth study conducted in 1987 by the Hudson Institute called Workforce 2000: Work and Workers for the 21st Century. Here is a summary of key conclusions that will impact on training:

- Twenty-seven percent of new jobs in the 1990s will demand only minimal, low entry-level skills. The rate in the mid-1980s was 40 percent.
- In addition, for the first time in history, the majority of new jobs (over 50 percent) will demand some postsecondary education. High school graduation or GED will no longer be a sufficient entry-
level qualification for half of the new jobs that will become available

- The middle- or moderate-skill-level jobs of today will be the lowest minimal skill ones of tomorrow.
- The percentage of the work force made up by younger workers will decline from more than 50 percent today to around 40 percent.
- The average age of the work force will increase from thirty-six years to thirty-nine years. An older work force, coupled with a general demand for newer skills, means a heavy demand for retraining.
- Many, if not most, workers will need to change jobs (not necessarily companies) five or six times in a career.
- Eighty percent of new workers will be women, minorities, and immigrants. All three categories have always provided a vital labor pool for U.S. industry, but have also historically received less education and training.
- By 1999 barely 10 percent of the entering work force will be able to solve for x in a simple algebraic equation.

In 1989 the American Management Association conducted a survey on testing and training practices, the results of which reflected the realities of the changing work force. Among the findings are these:

- Fifteen percent of the adult population in the United States (27 million people) are functionally illiterate. In addition, there are millions more who possess reading skills sufficient to qualify as literate but who are still unable to learn job skills from manuals or instructional materials.
- The Educational Testing Service, the company that administers the SATs, reported that fewer than half of the nation's seventeen-year-old high school students could figure the area of a rectangle, or knew that 67 percent of 10 was less than 10.
- Better than eight out of every ten firms surveyed that test job applicants in basic skills simply refuse to hire candidates who cannot pass those tests.

If U.S. companies are to remain competitive and continue to grow in the marketplace, they are faced with having to choose one (or more) of six alternatives in order to respond to the predicted demographics:

1. They can continue to ignore the problem, hiring only those who can pass standardized basic skills tests.
2. They can increase salary levels at the lower echelons to attract more-qualified applicants.
3. They can lower the standards and accept more entry-level workers with less ability.
4. They can send work abroad via satellite to countries where entry-level standards are much higher (i.e., Barbados, Ireland, Poland, and other former Eastern Bloc countries).
5. They can form partnerships with schools in order to improve the caliber and direction of the education their entry-level labor pool receives.
6. They can take on the task of providing training and full high school equivalency themselves. They would, in effect, then be accepting many more applicants and molding them into an effective work force.

Let's look at each of these in turn.

**Ignoring the Problem**

If companies continue to do nothing, they will fall behind. As the Workforce 2000 study indicates, the number of applicants who can pass the skills tests will decrease, requiring companies to conduct longer, more costly searches for fewer new hires. At the same time, the skills requirements will be increasing. To do nothing is obviously self-defeating and enters the organization into a downward spiral of increasing costs that cannot be reversed.

**Increasing Low-Level Salaries**

Increasing salary levels for lower-echelon employees only works so long as a mere few companies do it. When everyone gets on the bandwagon (which must happen as qualified candidates become rare), competition for new hires will become an inflated jungle of cutthroat recruiting practices. Obviously, this is as self-defeating as continuing to be selective would be.

*Currently some American insurance companies send actuaries work abroad. Large-scale accounting, book-keeping, personnel records filing, and shipping/warehousing data are increasingly being handled abroad electronically via satellite. Of course in manufacturing, assembly abroad of automobiles, clothing, toys, and electronics has already become an established and acceptable practice.*
Lowering Standards

The effect of simply lowering the standards in order to keep up the numbers will be a considerable decline in worker efficiency as new hires take longer to get up to speed on the job; a further decline in efficiency as current workers are distracted for longer periods of time to train new hires; and a severe decline in job performance standards as the quality of service sinks to the level of ability of the new unskilled work force. These kinds of declines cannot help a company stay competitive.

Sending Work Abroad

Many organizations have realized the futility of the first three alternatives and have chosen one or more of the other options. Sending work abroad by satellite, however attractive it may seem at first (not only are the entry-level workers more skilled but they are willing to work for less pay), in the long run weakens the U.S. economy. Sooner or later in an increasingly competitive global marketplace such a policy is also self-defeating. If we weaken or destroy the infrastructure at home, we lessen the quality of life here, too. Sending our economy abroad is no way to build it at home.

Forming Partnerships With Schools

This leaves only two truly viable responses to the problem: partnerships and in-house training. The lesser of these is partnerships simply because even the best of the many that have been tried have enjoyed only a limited success. One of the model programs, the New York Academy of Finance, with which I am involved, was begun in 1982. New York's banking community needed entry-level employees with solid basic skills. They were not finding them among the high school graduates who were applying for work as tellers, clerks, and data-entry operators. A number of banks (now numbering a dozen), spearheaded by American Express Bank, set up the Academy as a partnership with the New York City public schools.

In addition to their regular class work, students in the program are given extra classes two days each week in subjects such as finance, personal grooming, interviewing skills, and so forth. Most of these courses are taught by volunteer bank personnel. The core of the program, however, is that the enrollees serve as summer interns in the banking in-
industry. Maurice Tandler, director of the Academy of Finance, says, "The
internships are extraordinarily important to the success rate of the pro-
gram. [They] bridge the gap between theory and the world of work."  

Competition to be accepted into the program is fierce. The spon-
soring banks are very pleased with the vastly increased potential in the
new-hire situation. It is an excellent and very successful program, a
model for other such partnerships around the nation. The problem is
that, after nine years of operation, there were only 2,000 students en-
rolled nanowide in the New York Academy of Finance. Of the millions
of students graduating from high school in any given year, this excel-
 lent program is able to help only a tiny fraction. Certainly it is a worthy
program. However, it alone cannot stem the tide or even begin to ad-
dress the problems we've delineated above.

Still, partnerships work. And because they are a learning endeavor,
tainers should legitimately be involved. It is an option that is open to
us in which we can have a clear leadership role both in our working
organizations and in the schools and community outside. Most partner-
ship programs are of the "adopt-a-school" variety, where a corporation
works closely with a single school or school district to provide whatever
help it can. This help can take the form of financial aid, such as paid
work-study programs for students (much like the Academy of Finance
but usually without the instruction); teacher training at business loca-
tions to provide school personnel with a more realistic business outlook;
grants to teachers for creative innovation in the classroom; sponsorship
of students to business-oriented training sessions, either in the-com-
pany or at service organizations such as the American Management As-
sociation's excellent Operation Enterprise; general scholarship moneys;
purchase of equipment and materials; and even prizes and team spon-
sorships.

Participation in some form of partnering with the school com-
nunity must center around strong mutual trust, shared responsibilities,
close cooperation, and some form of clear-cut evaluation. Business in-
volvement can range from teacher training and improving school man-
agement, by rewarding schools, staff, and students, to enriching
instruction and curriculum, by addressing deficits in science and math
education. As a part of their Project Enlarge program, for instance, Po-
laroid pays the full salaries of up to ten employees per year who go
back to school to become math and science teachers.

To start a partnership, start at the top. Gain executive support in
your company first. Then seek top-level support from the school or school
system. Here are some factors that you must consider if you hope to
succeed:
• Be sure to provide training and monitoring assistance. Even experienced teachers will need training in key areas. And monitoring is the only way to make sure you are on-track.
• Require a partnership action plan to be drawn up in the planning stage. Be sure to include measurable, SMART objectives (see Chapter 3).
• Create clear evaluation procedures. The single greatest cause of failure in partnerships is that there is usually insufficient evaluation built into the program to allow the business half of the partnership to measure progress in ways that are compatible with its monitoring of its other areas of responsibility.
• Create evaluation stages and remain flexible in order to make mid-course corrections.
• Keep records. Plan and quantify the number of participants, activities, volunteers; length of support of volunteers; recruiting new ones; renewing the partnership; advancement and progress; etc.
• Check perceptions and attitudes as well as concrete achievements.
• Be sure to report back to all of the audiences involved. Use newsletters, meetings, fund raisers, annual reports, and the media, where possible.
• Hold celebration and recognition ceremonies. People love them, and they keep your partnership alive and in the public eye.

Providing the Necessary Training

Finally, and by far most effectively, companies can take on the task of training their employees themselves. Clearly, in-company training, as we have described it in this book, has proved itself and is still proving itself to be the most effective source of skill learning. This includes basic skills. In the company's large chemical plant in Rhode Island, Hoechst Celanese has undertaken a program to provide all of their rank and file employees with training in basic chemistry and math beyond that which they use on the job.

Other companies who are leading examples of success in this area are Motorola, Polaroid, Ora Corporation, and General Motors. The program at GM is particularly interesting in that it has been fully supported by and worked up with their unions. In fact, unions are an excellent source of support for training because they realize that their membership's contribution to the organization is considerably enhanced by solid basic training, that it promotes job security and makes the membership more flexible on issues like job retraining.
Styles of Training

A few years ago there was much discussion in the training press centering around what was then called the "woo woo" theory of training. The field of modern psychological practice had evolved a number of very effective facilitative techniques for drawing people out, or raising their consciousness, or modeling their behavior. Trainers, many of whom had taken a lot of psychology and pop psych courses in college in order to prepare for their careers, adopted these techniques with great vigor. In fact, some are still doing them.

The result in the early to mid-1980s was a lot of managers who had "gotten their heads straightened out" with "pop psych" people-management techniques. At the same time, there was a backlash of rank-and-file workers who were dissatisfied with the "other world" stuff they kept getting in training. It was usually fun, but not very practical. The workers called it "soft." They wanted to learn hard-core, no-nonsense, hands-on, job-related skills. As a result, today technical and skills training is often separated from "regular" training. The American Society for Training and Development has a separate membership section for technical and skills trainers. It has its own annual conference and exhibition (at which nearly all of the same vendors exhibit mostly the same wares that they show at the regular sessions), and its members consider themselves a breed apart, separate from those "woo woo" guys who train the managers.

Such an unfortunate division is the price we have had to pay for overindulging in one aspect of our craft. The issue should not be whether one trains rank-and-file workers, or managers, or salespeople, but rather how well one trains all of them. Each category or work type demands different skills and, therefore, different techniques for training. Chapters 8 and 9 delineate procedures for matching the method to the skill and to the learner. It is this concern that should dominate training's response to each group, not simple stereotypes, however well deserved they may have been in the past.

However, if you are launching a new career in training, be aware that you will very likely have to confront this issue at some point. If that happens to you, the best answer to it is that too much of any method is not good training and that the method must be created to fit the learner and the skills to be taught. Keep effective objectives to a minimum and concentrate on the skills-oriented ones. Keep the practice step as the major function in your training, and you should be fine.

\footnote{Of course I believe that skills trainers should indeed have a special interest group within ASTD. It is their concomitant dismissal of the rest of training as "too soft" that I find sad, especially since the epithet has been deserved.}
Remember as well that the training methods you use depend on whom you are training, and where. For instance, Socratic facilitation is great. But nothing works if it is overused or doesn’t fit. In Japan, Socratic dialogue is a near impossibility. In France it is unavoidable. In either case the important thing is not the technique you use but rather the purpose for which the technique is used. Facilitate, yes—but Socratic dialogue is not the only form of facilitation. For many skill-oriented jobs, it is the worst kind. The Japanese may need to be brought slowly to dialogue (if it will help them to perform a new skill) while the French may have to be carefully weaned into other facilitative activities like simulations and role plays. We know that training works best when it is 60 percent or more practice. Oral facilitation is only one kind of practice. Balance all of them.

The Final Decade

Training today is on the threshold of its greatest growth spurt since the medieval guild halls institutionalized the practice of one-on-one apprentice training. It is in a position very much like the one in which public education found itself in the United States at the dawn of the twentieth century. The traditional ways of preparing workers for their jobs are failing. Skilled entry-level workers are coming more and more to be in short supply. The slack will be picked up increasingly by other less traditional sources of new hires such as the handicapped, women, and immigrants.

This is an exciting time. And training is at the core. More and more workers will need to be retrained, not just once but several times in their work lives. New hires will need new and better training. The economy is challenging U.S. companies to improve their service and performance in order to hold on to their market share. This struggle must demand a greater and greater attention to human capital through training. As trainers, we are entering an exciting decade and a dynamic new century.

As I write this, in 1992, the European Common Market grows to twelve members and will provide a marketplace of over 320 million people. This is one-half again larger than the United States, the world’s largest trading nation. With the rebirth of capitalism and democracy in what used to be the Eastern Bloc countries, that market will grow even larger. With it will surely grow an intense need for training.

In the fall of 1991, months before the political developments that led to the dissolution of the Soviet Union as a nation, there was a huge
international training exposition in Moscow where the training world scrutined its wares. At this writing, there are several missions from the Department of Technical Cooperation and Development of the United Nations working to develop training programs at the invitation of their host nations in Eastern Europe. Each of the newly independent former Soviet republics is now seeking assistance from Europe and the West not only for immediate subsistence but also to help them to most speedily enter into the competitive world marketplace. Much of that help must be in the form of training and the training of trainers.

The interest is already there, but we must recognize and deal with the fact that currently U.S. training methods are largely held somewhat suspect in the rest of the world. U.S. training is not as popular worldwide as U.S. technology is. This is partly due to a holdover of earlier concern for the perceived threat of U.S. dominance of trade, and as a result, many smaller nations turn to Canada, the UK, and Australia for Western training. But a large part of the less than favorable attitude also stems from the pattern of U.S. training in the last two decades of being too "soft" and not practical enough. American trainers are typically perceived to be in too great a hurry, and so our courses are frequently regarded as superficial (which is true in the case of many of the generic packages that have been exported in the past). And finally, our exported courses seldom truly reflected the nature of those to be trained in other lands and so did little to build a reputation for success.

But the demand for U.S. training will grow along with U.S. entrepreneurship, which is in great demand in Eastern Europe, Africa, China, and many other areas. Our training is becoming less "woo woo" and more practical daily. We are maintaining the premiere state-of-the-art training position, and so the demand for all sorts of training will grow. As that demand for our training grows, trainers must go abroad to meet the demand. That opens a twofold career choice to most of us: Either go and help others or stay here and fill the gaps and growing demand at home. Either way, training is a wonderful career choice for the next two decades.

Summary

As its title suggests, this is a chapter about current issues in training. We have taken a brief look at the changing nature of the work force, the incredible growth of technology in training, and its proper role; the dichotomy of "soft" versus "skills" areas of training; the final decade of
the century and the impact on training of the entry of Euro 92 and Eastern Europe into the trading arena.

Each of these issues is described from a training perspective and, wherever possible, some steps and considerations in response to each of them are provided. We conclude that the next decade holds nothing but promise for the growth of training as an aspect of the business world, and consequently, it's a great place to be.
Adult Development and Learning: Issues for Continuing Professional Education

L. Earle Reybold

The basic assumption of continuing professional education is that professionals will and should engage in lifelong learning (Cervero, 1988). But there is a growing concern that "continuing education is, at present, heavily didactic and is directed toward keeping professionals up-to-date" (Nowlen, 1988, p. 20). Skill training is the primary focus of most continuing education programs, but I would like to advocate a developmental approach to continuing professional education.

Generally, adult development may be defined as change over time; specifically, those changes come in the form of biological, mental, and sociocultural changes—all of which impact and are impacted by the adult learning experience. Adult educators have long recognized a relationship between learning and development. Merriam (1984) says the interface between adult development and adult learning is evident—the processes of development and learning impact one another. On one hand, educational experiences meet learner needs, stimulate changes in values, provide new contexts for decision-making, and sometimes transform an individual's way of thinking about the world. On the other hand, developmental changes expose individuals to new ways of thinking and learning.

The topic I would like to discuss today is the interconnectedness of adult development and learning. The goal of this discussion is to present a developmental model of adult
learning for continuing professional education, both in program development and in the classroom itself. First, we will discuss the major models that guide continuing professional education and touch on the need for a more diverse developmental approach to learning. Then, we will discuss how a developmental model of continuing professional education can be integrated with emerging models of teaching and learning that recognize different developmental needs among learners.

Major Models of CPE

According to Knowlton (1988) there are three basic models of continuing education: the Update Model, the Competence Model, and the Performance Model. The Update Model emphasizes problem solving and keeping professionals and business people current. The components of this model include: a profession’s knowledge and skill base, new knowledge and skills, new technology available to the profession, and new legislation that may affect the profession. As Knowlton (1988) argues, though, “keeping professionals and business people up to date is a means, not an end in itself” (p. 28).

The Competence Model, rather than concentrate only on knowledge acquisition and skills training, focuses also on what a professional really does. Knowlton (1988) says that “to be competent is to possess sufficient knowledge and ability to meet specified requirements in the sense of being able, adequate, suitable, and capable” (pp. 31-32). The components of the Competence Model include: critical thinking skills, preparation for new roles, applied human relations, and skills refreshers and updates. The major flaw of
this model is the overemphasis on the individual, disregarding other influences (Knowlen, 1988).

The Performance Model, proposed by Knowlen (1988), considers both individual characteristics and cultural influences to be important in continuing professional education. "Performance can never be fully understood by studies of the decontextualized individual. The relationship between continuing education and performance is unsatisfactory when it is based simply on the relationship between a job description and an individual's knowledge and skills" (p. 69). The components of the Performance Model include: life skills, influences of environments and cultures of practice, update needs, preparation for new roles, applied human relations, critical thinking skills, individual and organizational learning skills, and a balance between personal and organizational development.

This last model does address the issue of personal development in continuing professional education, but an effective model must also recognize diversity in development. Our current understanding of human learning and development comes from studies that ignore the experiences of many individuals. Authors such as Belenky et al., Gilligan, and Luttrell have just begun to broaden our understanding about human development by including the developmental experience of women and ethnic minorities.

Emerging Models of Teaching and Learning

Learners come from diverse backgrounds and have various learning and development needs. The most effective education occurs at the intersection of a teaching style and
these learning and development needs. Two models are important to this discussion: Belenky's model of connected teaching and Caffarella's model of collaborative learning and interactive instruction.

Belenky and her colleagues interviewed 135 women for their study of women's epistemological perspectives, or ways of knowing. Based on the findings of that study, they suggest that most learning experiences are geared toward a male audience, that women are often uncomfortable in traditional classroom situations. Rather, the women in their study expressed a need for a nurturing environment in a community-type classroom. A connected teacher, however, "is not just another student; the role carries special responsibilities. It does not entail power over the students; however, it does carry authority, an authority based not on subordination but on cooperation" (Belenky et al., 1986, p. 227).

Caffarella (1992) presents another view of teaching and learning in diverse classrooms. Her model of collaborative learning and interactive instruction emphasizes "a climate of mutual respect, trust, honesty, and openness to multiple perspectives" (p. 24). She provides specific techniques for fostering collaborative learning, suggesting that certain formats are better suited to desired learning outcomes. For example, if the continuing professional educator is mostly concerned with skill building, appropriate instructional techniques might include demonstrations, planned experiential exercises, behavior modeling, and case studies.

Connected teaching strategies and collaborative learning are not meant to replace current instructional techniques, but to supplement them. Salstrom (1990), in her study
of women’s learning in formal educational environments, suggests educators should re-examination the value placed on dominant instructional techniques such as debate and working alone. Just as adult educators in general are coming to realize the need for diverse teaching methods, so too should continuing professional educators. CPE facilitators can integrate newer, more collaborative strategies into their instruction and meet the learning and development needs of more individuals.

Conclusion

I agree with Knowlen’s (1988) argument for a model of continuing professional education that goes beyond skills training. Keeping practitioners up to date is not enough. But I also believe that how we teach is as important as what we teach. A developmental model of learning engages all learners in an education that fits them. Emerging models of teaching and learning recognize that our classrooms are diverse, our learners have different educational needs. By incorporating connected teaching strategies and creating a collaborative learning environment, continuing professional educators provide a more complete education.
References


Chapter 1

The Function of Training

WHY WOULD a company hire a trainer? You can probably think of a dozen or so specific problems that a company might try to solve by setting up a training program. But no matter how many you might think of, all of these problems can be condensed into one basic reason: A company hires a trainer to produce a change in its operation. The singular function of training is to produce change. When it does, it is successful; when it doesn't, it fails. Regardless of other results a trainer or training manager may accomplish, the bottom line is a measurable change in performance. The trainer is an agent for change, and this book concentrates on the ways of achieving that change.

The Nature of Change

No one wants to change. We would all happily have others change to suit our needs or habits or desires. None of us, not even the managers who demand the change, wants to change how we do things. Our society pays great lip service to change. We call ourselves the most progressive and advanced society. Indeed, technologically we are advanced. But if that technology causes us to change the way we do things, we resist it (unless, of course, it palpably makes the task easier). We want to think faster and work more efficiently, but not if that means having to learn how to program a computer. We like creating new jobs and rapidly developing new industries, but not if that means having to move or change the face of our cities. We like to earn more money, but we don't want to learn the skills needed to perform new, higher-paying jobs. A love of the status quo is a very human trait. To change is to
risk losing what we already have, and few people are willing to run that risk.

Of course there are exceptions. Some people welcome change in any direction. But most people are, at best, concerned with what the future may bring, and when learning new job skills, they are apprehensive about their ability to make the change. They resist the required change, often in subtle ways, and it is this resistance that the trainer must anticipate, recognize, and reduce.

Motivation to Change

Change is neither good nor bad, only constant. Individuals respond constantly to various combinations of elements in the environment. These elements can be as diverse as pressure from a family or peer group, the temperature of the room, a recent illness, traffic conditions, a working situation, feelings of indigestion, attitudes about age, concerns about inflation, or fears for the world economic condition. Or these elements can be a host of other factors that affect us. We are constantly adjusting to a shifting environment, changing to meet new demands. Thus, it is the environment that actually creates change.

Trainers cannot create change, but they can guide it. Obviously, no trainer can control or even influence most of the conditions that create change. Conditions constantly form and reform, and individuals learn to cope with those conditions they perceive as needing a response. It is this perception that is the key. Because we are reluctant to change, we alter only those behaviors we perceive as needing change, and then we change as little as possible.

Educators talk a great deal about motivation—the desire to learn—but in the end, an individual either does or does not want to learn. An instructor cannot create motivation where none exists. We are all familiar with the old saying “You can lead a horse to water but you can’t make it drink.” What can be done, however, is to work the horse hard before leading it to the water so that it will be much more likely to want a drink. In other words, a trainer shapes the environment to make it conducive to learning. The how-to’s of this book are all directed toward shaping and controlling the learning environment to facilitate change.

Changing People’s Behavior

Anyone who has ever tried to diet or to stop smoking knows how difficult it can be to break a habit. Yet no change can take place until the
Ten Steps to Making Effective Changes

1. Assess the corporate status quo. Determine the climate for change.
2. Define the objectives of your proposed change in terms of end result, not method.
3. Devise methods for unfreezing present procedures.
4. Develop methods for teaching the new, desired procedures.
5. Devise methods for rewarding (refreezing) the new procedures.
6. Put the methods you devised in step 3 into practice.
7. Implement the training planned in step 4.
8. Utilize the methods devised in step 5.
9. Evaluate the effectiveness of your changes so far. Make necessary adjustments.
10. Repeat the process until you achieve your desired results.

old way is given up. Thus, the first step in making a change is to "unfreeze" the present habit. The second step is to replace the broken habit with a new one, that is, to change the behavior. The third step is to "refreeze" the new behavior, usually through a reward system. The reward helps the person perceive a benefit from the change and makes him or her feel good about it.

One of the most successful applications of this three-step method is found in the U.S. Marine Corps induction system. New recruits are taken to a place where they have never been, talked to in a manner in which they have never been spoken to before, and stripped of their old wardrobe, which is replaced with an ill-fitting new one (including underwear). They receive a closer-than-close haircut; must sleep in narrow, public conditions; are denied all contact with old friends and family; and must submit to complete control over their vital functions such as sleeping, eating, and exercising. In effect, the Marine Corps disposes of all old habits. Life as it was known before induction into the corps is completely unfrozen. The recruits have no choice but to change.

Now the Marine Corps creates its change. In six weeks, recruits learn an entirely new way of life. They lose weight, become much more physically fit, learn detailed new skills, obey instructions, experience group living, and take on a host of other behaviors necessary to survive in that organization. As each step is mastered, recruits are rewarded with a sense of pride, accomplishment, and self-worth that refreezes the new behavior, making it seem right, proper, and worthwhile. In my experience, most marines remain loyal to the corps and value its training for the rest of their lives.
Controlling the Training Program Environment

The Marine Corps (and the other branches of the armed services) has a singular advantage over industrial training programs: complete control over almost every element of the learner’s environment. The depth and impact of any change to be achieved relate directly to the degree of control a trainer has over the learning environment. The object, then, is to gain as much control as possible over the environmental elements in each of the three stages of the training program: pretraining, training, and posttraining. Control of the actual training environment is easiest, but to be fully effective, a trainer must control as much of the environment as possible in all three stages. Let’s consider each stage, with its respective requirements.

The Pretraining Stage

To gain some control over the environment prior to training, a trainer needs to become active in three areas, discussed in greater detail elsewhere in the book: needs analysis (see Chapter 5), in-house networking (see Chapters 4, 8, and 16), and companywide public relations (see Chapter 16). At this point, we need look only briefly at each area.

Needs Analysis. Most frequently, management institutes a training program in response to a perceived need. It is often rushed into operation because few managers have the foresight to perceive and solve future problems outside their regular responsibilities. As a result, too often the trainer has little say in the initial demand for training or even the shape it takes. A needs analysis is one way to anticipate future needs and avoid this situation.

Training needs arise traditionally from one or more of five areas: government regulation, labor, management planning, customer responses, and technological advances. By monitoring all, or at least the most applicable of these, you can gain greater control over the pretraining process by anticipating and preparing for new training thrusts. In fact, you might even become the agent who defines for management the need for training and so gain even more control over the nature of training in the organization.

In-House Networking. Networking is simply a process by which you can keep your finger on the pulse of the organization. It means not only cultivating existing contacts in the departments you train for but regularly meeting with all managers and supervisors to define your func-
tion, to determine what they want their people to learn, and to explore how you can best produce results for them. It is particularly important to sit down with the supervisors and managers who normally oppose training and resist your efforts. By sounding out the people to whom your trainees will report, you will find out where the training should lead, and you'll gain the opportunity to shape their expectations and build their support. These discussions will ultimately give you greater control over the pretraining stage of your work.

Public Relations. Perhaps the most important pretraining step is to create a companywide public relations effort. If those to be trained perceive it as a good thing, a strong company benefit, and something of which to be proud, you'll diminish much of the resistance to learning. The only way for your trainees to develop that pretraining perception is for you to emphasize the positive effects of training through active public relations. To build a strong positive image for training, try the following:

- Seek out the editor of the in-house magazine or newspaper and offer to write articles and take pictures for the paper. Report regularly on what is happening in the training programs. Create a high profile. Write a regular column, if possible.
- Give awards for completion of training. Certificates are good; lapel pins and badges are better. Every new employee will see the certificate or badge and realize that training is something the company is proud of.
- Offer to speak at conventions, meetings, or other employee gatherings. Blow your own horn a bit.
- Make friends with company public relations people and let them know the important work you are doing and what your plans are for the future. Publicity sells training.
- Develop a regular system for advertising training programs. This is particularly vital if you offer optional courses.
- Become a public speaker for other departments. Acquaint yourself with available consultants and speakers, and when a division wants a guest speaker, arrange it. Thus the other departments' entertainment becomes a part of training, too, and they begin to look on your function as a positive one.
- Bring in outside speakers to train in key generic areas such as management communication, technical writing, sales skills, telephone skills, office etiquette, negotiation techniques, and so on. If you don't
have a budget for this, get one; it adds glamour to the training function and makes your role even more important.

- Take a proactive stance (see Chapter 5). Memos don’t have to be one-way. Every time you complete a training unit, send memos to key managers, the CEO’s office, or others to inform them of the results—for example, describe the number trained, in what skills, anticipated follow-up, and so on. This gives training a high profile, and gains you importance in the company.

The Training Stage

There are four aspects you can control during this stage: the agenda, personal leadership, methodology, and physical space. Each of these is discussed in greater detail elsewhere: Agenda is explained in Chapters 3 and 8; personal leadership is covered in Chapters 2 and 4; methodology is presented in Chapters 2, 3, 8, 9, and 11; and the physical environment is explored in Chapter 12. Here is an overview of these factors.

- Agenda. Setting the agenda gives you control over time. All of us are governed by our personal sense of time. In fact, the efficient management of time is one of the key skills any executive must master. The English language is full of expressions about time and how we respond to it. We “kill time,” “make time,” “waste time,” “run out the clock,” have a “good time,” enjoy “the best time,” and so forth. By setting and sticking to your agenda (that is, deciding what is to be covered, when it is to be covered, and in what order), you take control of the time your trainees will spend with you. You begin and end the lesson, you set the subject, you say when the lunch break begins and ends, and you decide how long other breaks will be. Time exerts subtle control over us, yet mostly we are unaware of it. Simply by setting the agenda, you take control of this vital aspect of the learning environment.

- Personal Leadership. Think back to your schooling. Which teachers were most effective? Which taught you the least? Your most effective ones were able to lead you to the learning you acquired—the least effective ones simply were not.

- People need to feel they are in good hands. Every parent knows that children challenge authority from time to time to discover the boundaries of their freedom. If they find no boundaries, children usually become very insecure and frightened. But when they learn the limits they are allowed, children gain a sense of security they can rely on. In effect, they see and respond to good leadership.
of instruction (Herr and Ames, 1981). We know much more today about motivation and learning than we did ten years ago. We continue to make progress. However, each step we take forward also tells us something about our limitations as well. For example, reinforcement theory, which seemed so scientific and mechanistic, must now deal with a cognitive reinterpretation of some of its most fundamental principles (Wise, 1977). The greatest implication of this new awareness for instructional excellence is that instructors must still make their personal judgment regarding what is best for them and their learners. The state of any method of instruction is not beyond improvement or revision. We do not have the scientific understanding to be rigid or dogmatic about the way we instruct. Close communication between the adult learner and the instructor is still needed, not to "debug" an instructional program but to continue the evolution of a very young and primitive science.

One of the reasons adult educators have been adamantly about the right of adults to self-direct and participate in the development of the instructional processes that occur in them is not only because of their respect for principles of adult development and behavior but because it turns out that adult learners input will narrow and limit the entire discipline.

Finally, it is assumed that every instructional plan needs a motivational plan. More often than not, the unstable variables that interfere with and complicate learning are human variables—people's needs, emotions, impulses, attitudes, expectations, interactions, beliefs, and values of people (Weiner, 1984; McLagan, 1979). Not surprisingly, these are motivational variables as well. Whatever the subject matter, it is usually rather stable and controllable. It has a logical structure and sequence. Finding an instructional design format for most subject matter is not an enormous problem (Reigeluth, 1983). There are many to choose from, but most do not adequately deal with the human variables just mentioned. However, many instructional theories are vitally concerned with these variables and offer many methods and principles to deal with them. The challenge, then, is to integrate these methods and principles with instruction into a logical framework. Most instructors do this, but through intuition and simultaneous decision making. Their effectiveness is limited by the extent to which these variables are taken into account.
Chapter 1

Training Objectives, Policies and Strategies

The training department's purpose

Training is an expensive function generally, and in the case of organisations that may be involved in more than one function, it is important that training be done in such a way that it is consistent with the overall objectives of the organisation. It is not only a matter of providing employees with the skills that they need to carry out their jobs, but also of providing them with opportunities to develop their abilities and to gain experience that may be useful in other areas of the organisation. Training also has a social function, in that it helps to create a sense of community among employees, and it is important that this is done in such a way that it is not seen as a form of social control.

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Experiences in training, whether formal or informal, provide a valuable opportunity for learning and personal development. They can help individuals to develop new skills and to improve existing ones, and they can also help to build confidence and self-esteem. Training is therefore an important part of the overall strategy of an organisation, and it is important that it is done in such a way that it is consistent with the overall objectives of the organisation. It is not only a matter of providing employees with the skills that they need to carry out their jobs, but also of providing them with opportunities to develop their abilities and to gain experience that may be useful in other areas of the organisation. Training also has a social function, in that it helps to create a sense of community among employees, and it is important that this is done in such a way that it is not seen as a form of social control.

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A Handbook of Training Management

be readily available, or an intake of young people who will require training from scratch. If this is not properly planned there is a danger that the operator strength will be inadequate and the lead time in training new entrants will cause some embarrassment.

The indications are that there may be trouble in management areas, too. Most of these executives are in the 30 to 40 age range and it is unreasonable to suppose that a significant proportion of them will be expecting to be promoted out of the bureau division in the foreseeable future. There is no one to take their place unless there are promotions from the analyst or programmer ranks, or new managers are recruited from outside. In either event, some management training is indicated.

Management development

It will be obvious that the age profile only gives a very limited picture of the situation but nevertheless it sounds some very important warnings which have to be heeded. In order to obtain a more accurate picture, it is necessary to produce much more detailed information of the likely career progression of individuals in order to be able to compute what movements are likely and what the training implications of such movements might be. Our method of achieving this for managers and supervisors is through a management development scheme and there is no reason apart from sheer volume of work why the same basic principles cannot be applied throughout an organisation.

Management development sets out to improve and maintain standards of managerial performance in an organisation, at the same time providing the machinery for ensuring that there is a continuing supply of suitably trained managers to meet the organisation's future needs. This objective calls for a comprehensive inventory of managerial talent, a means of identifying training needs and providing training to assist managers to equip themselves better to carry out their present jobs effectively and a succession plan which seeks to predict career paths and incorporates suitable training for promotion. The considerable amount of data necessary for such a scheme demands that it be computerised in a medium to large sized organisations. In smaller concerns a manual system is workable. Whether mechanised or manual, it has to be capable of retrieving the details of prospective candidates for a vacancy when a job profile is keyed into the system. It therefore has to be able to handle a large number of variables. The personal data in the records also needs to be very detailed and, above all, up-to-date. The scheme must of course be flexible because, as with business forecasts mentioned earlier, only a limited number of predictions will become reality. If, for example, a manager who was earmarked for promotion next year suddenly decides to resign, there will be serious problems unless there is a contingency plan to deal with such an eventuality.

The monitoring of managerial performance is usually carried out by means of performance reviews. The writer avoids the more commonly used term appraisal because it seems to imply a one-way autocratic approach. Performance review assumes that the interviewee takes an active part in the activity, in other words it is a democratic two-way system. Targets, which were agreed, not set, at the last interview are reviewed and where they are not met, reasons are sought. If these are outside the control of the employee, allowance has to be made for this and cognisance taken of the possible effects of such factors in the future. Where failure to meet targets satisfactorily points to shortcomings in knowledge or capability, training needs are identified and recorded in the training plan for suitable action. At the same time the targets, including the satisfaction of the identified training needs, are agreed for the coming period. In this way, the employee will only agree to targets which he believes he will be able to achieve and he will be able to talk through any difficulties that he may feel he is going to encounter. There is greater commitment to strive for achievement of the agreed objectives.

The training department's contribution to management development can be considerable but it depends to a large extent on how well managers carry out performance reviews. If they do not recognise what constitutes a training need when targets are not met, then the training machinery will not be set in motion, performance will not improve and the same problems may arise at the next review. It should therefore be stressed that an organisation should not attempt to introduce a performance review system without taking early steps to ensure that all employees who will be involved are trained to carry out their responsibilities under the scheme effectively. This not only means being given assistance with Interviewing and discussion techniques but also with the recognition and identification of training needs.

In some management development programmes, potential managers are also included in the scheme. It is important for training specialists to recognize that the special needs of these employees. Apart from the obvious requirements for them to become proficient in using management techniques and systems, they require a major re-orientation in their thinking from operating as specialists to a total business approach as part of the management team (see Chapter 1).

Frequently employees complain that their managers are not concerned about their future; that the policy is to fill senior vacancies from outside; that vacancies are seldom if ever advertised internally; that they have been passed over for promotion, and so forth. Yet when management tries to introduce a management development scheme which, if properly operated, would remove these difficulties, there is often resistance to it. As has been said, the personal records of everyone in the scheme have to be comprehensive and up-to-date. Personnel departments have problems keeping their records up to the minute, since changes which they have not initiated themselves are seldom
in this situation is potential and that of limited effect in meeting organizational goals. There is now growing support among professional trainers for adopting the approach of the organization development consultant (see p. 113) who concerns himself with total organizational strategy. Trainers become consultants to the management, working with them to establish organizational objectives, to monitor change and innovation and to formulate training strategies which are geared to the solution of real problems which affect organizational performance. In dealing with training opportunities on a total strategy basis, they may find themselves involved less in the design and running of training courses as in the past and more with those aspects which help to ensure that the training is getting to the root of the organization's needs.

In summary, a training department’s strategy should therefore embody:

- An overall sense of direction
- An assessment of environmental influences, including leadership style in the organization
- A strategy geared to training intervention at organizational level, and thus to satisfying true training needs as well as those of the workforce
- Methodology which aids the satisfaction of those needs
- Planning and tactical flexibility
- An acceptance of the importance of measuring results and modifying strategies where necessary.

Training plans

The training plan is a practical document which brings together all the training needs derived from the business and manpower plans, the performance review system and any other recognized sources. It not only sets out what the needs are, how they were established and what standards are to be achieved, but also indicates the means by which they are to be satisfied, with the estimated time scales. The person or persons who will be responsible for the training are specified and budget allocations stated. A suitable form may be as shown in fig. 4. The budget figures are purely fictitious and should not be assumed to be typical.

Conclusions

One underlying principle which has been stressed throughout this chapter is that, of the unification of training objectives, policies and strategies with the business plans of the organization. This is a key factor if training departments are to be truly effective in terms of carrying out their purpose of improving organizational performance.
Unhappily, this condition is not always met. Commonly training departments find themselves setting their own objectives, producing plans and developing strategies in blissful isolation and without any detailed knowledge of the corporate goals of the organization. The result is that the true objectives are not identified and such training is carried out in a desultory and without any idea as to what should be the priorities.

This is not necessarily the fault of the training manager. He may apply himself assiduously to the task of trying to convince his management of the desirability of his direct involvement with the affairs of state, and his efforts may be met with a negative, even hostile, response. Gaining his management's support to the desired extent may be an uphill climb, but nevertheless this goal should be pursued with the utmost vigour (see Chapter 9).

A successful training function has to be built on teamwork (see Chapter 6). Not only should everyone be aware of its aims in organizational terms, but they should also recognise that they each have a part to play and should be fully committed to making training policies work. Creating this climate should be one of the training manager's primary objectives.

One of the most important steps in the training process is the establishment of the training needs. In using this term we are implying that there are weaknesses somewhere in the system which demand strengthening by means of training in some form or other. It is common to divide training needs into those which arise from the requirements of the job and the present capabilities of the incumbent. However, we must not confine our definition solely to the individual, although in the past analysis of satisfaction of needs has to be carried out through individuals. The organization is men to have needs when it recognizes that it is not geared to meeting the objectives which it sets itself. In other words, when setting its targets it cannot make the assumption that the resources already available will be suitable or adequate. It therefore has to examine any shortcomings and make suitable provision in its plans for eliminating them. This involves among other things, establishing whether the organisational structure and capability are right to meet the challenges of the future and identifying the needs which arise in the various functions or occupations throughout the business. Finally, individual needs will become evident when, say, players carrying out those functions are found not to be fully equipped, in terms of knowledge, skills or attitudes, to meet the requirements of their jobs (see Chapter 5).

In order to be able to measure the gap which has to be closed by means of training, it is therefore necessary to follow a three-stage procedure. We need to ascertain, in some detail:

- The desired performance of the organization and its shortfalls in meeting its objectives due to training deficiencies.
- The training needed in each occupation to enable that function to be carried out comprehensively and
- The expected contribution and present capability of each member of the workforce.

It has already been indicated in Chapter 2 that the overall training needs in an organization will be highlighted by the business plans which indicate what the concern's activities are expected to be over the period...
The Function of Training

Were you ever in a classroom when a student challenged the authority of the teacher? If the teacher handled the situation with a strong, positive, and confident response, how did the class react? If the teacher failed to react with confidence or, worse, allowed the challenge to pass unanswered, then what happened? The obstreperous student simply became more obstreperous, pushing to find the limits of his or her freedom. If there were no limits, the student became the leader and took over the class. Learning (at least formal learning) stopped, and few students appreciated it. I have seen even the most difficult students become active, avid learners once they find a teacher they can look up to. People need to know they are being led with confidence.

Leadership, however, is not a heavy-handed action. A too firm hand of leadership is oppressive, whereas good leadership simply fulfills the expectations of those being led. It is a subtle form of control, not a coercive one. For example, we expect when we board a bus that the driver will drive it, and we put ourselves in that driver's hands without a thought, unless for some reason he or she loses our confidence. Only when leadership is questioned is there a problem. Exercised consistently, with confidence, sound leadership can exert a powerful and subtle control over the learning environment.

Methodology. It is not what you say but how you say it that carries the impact. Comedian Norm Crosby has made a career of uttering double-talk with such conviction that people swear he must be saying something. Lewis Carroll's "Jabberwocky" is the ultimate literary example. Educator Marshall McLuhan identified this important element of human communication with his realization that "the medium is the message." In short, the method you use to teach something is far more important than the content you are trying to teach. The method that fails hinders learning rather than helps it. After all, it is the method you use that either stimulates or fails to stimulate the learner to take hold of the new material and master it. The method becomes even more critical when you realize that the average adult attention span is only 20 to 30 minutes. And that's for college graduates; if you train minimally educated people, their ability to pay attention to what you say will be even less. This means that no matter how good a particular method is, too much of it becomes boring. Few people can concentrate for very long on one subject, presented in one manner. Fortunately there are a great variety of methods you can use. By carefully blending the methodology and by matching the appropriate method to the material to be covered, you will gain tremendous control over the learning environment.

Physical Space. I once taught a college course in a military barracks that had been built as a temporary structure thirty-five years earlier.
The floor was a dull, industrial brown linoleum, badly worn and stained. The walls had once been an institutional green but were now splotched with smoke stains, soda pop spills, hair oil smudges, and other unidentifiable things. The building was used largely for showing films, so all the windows were painted over in black, although resourceful students had scratched numerous peepholes to relieve the darkness. The building was so old that when the wind blew, the walls moved and creaked. Finally, because it looked so poor, generations of students had treated it poorly. The floors were spotted with cigarette burns and covered with ashes and butts, the desks were broken, and graffiti was everywhere. To this day I don’t know how really effective my teaching was in that room, but I remember dreading having to teach there. I can only imagine how the students must have felt.

Physical environment plays a greater role in teaching than is usually suspected. Yet the surroundings cannot guarantee learning, nor do they totally prevent it. At least one of my students in that barracks classroom earned and maintained honors status and became a lifelong fan of my teaching. But the environment does have an intangible effect on how the learning is perceived.

To a great degree, physical environment is under your personal control. Certainly the way you set up the room, what kinds of audiovisual aids you use, the room’s furnishings, and to some extent even the lighting all are in your domain. Furthermore, if you have control over budgets and suppliers, you can choose comfortable chairs (a vital element), the color of the room, lighting patterns, acoustical properties and—the most vital element—the temperature. All these factors allow you to shape an environment in which your trainees will want to learn.

The Posttraining Stage

Of the three stages, the posttraining environment is the most difficult to control. Planning, networking, and personal leadership all impact directly on the training program, but once the training is finished, how can you continue to exert your influence? How can you effect changes in what has already taken place?

Of course you cannot, but by evaluating your performance you can monitor your own effectiveness in creating change for future training programs. You cannot control what people do with what you have taught them, but you can continually adapt your training methods so they produce the desired results in the future.

There are three ways you can control the posttraining environment: formal evaluations, evaluation sessions, and additional public relations.
The Function of Training

Evaluations and evaluation sessions are covered in detail in Chapter 6, and public relations are partly discussed in the pretraining section earlier in this chapter as well as in Chapter 16.

Formal Evaluations. When he was campaigning for reelection, former New York City mayor Ed Koch used to interrupt television newscasts and even his own speeches to ask, “How’m I doin’?” At best, progress is random without some form of monitoring. With sufficient feedback, however, the person in charge can steer toward a goal. This is never more true than in training. Once you’ve created your training program, you need to measure how successful you’ve been in meeting your objective.

For trainers, this measuring is never a simple matter, because there are so many variables that can impact on the results. At the very least, however, there are two ways in which results need to be monitored:

1. Short term. This is the easiest. For the short term, use regular formal tests, projects, simulations, or assignments to learn whether the trainees are (1) understanding what you’re teaching, (2) learning the material (at least for the time being), (3) keeping up with the material, and (4) able to perform the new skills you have been working on with them.

2. Long term. How long do your trainees remember or practice what you’ve taught them? You need to develop several long-term measuring devices (such as follow-up surveys, advanced levels of training, and key variables to monitor, all of which are detailed in Chapter 6) to check against each other, against your short-term evaluators, and against the impressions you get from discussions with superiors and supervisors.

In any kind of trainee evaluation, there are two types of results to look for: cognitive and affective. Let’s look at the nature of each:

1. Cognitive results. In both short- and long-term evaluations, look for concrete learning. What skills or knowledge did the trainees gain by attending your seminars or workshops? The answer to this question provides an evaluation of the cognitive results.

2. Affective results. Much harder to evaluate, affective results are a measure of how the trainees feel about what you’ve taught them. Remember, you want to create a positive predisposition toward training. At the completion of training, ask them to evaluate you. This gives you an immediate affective response. To gauge the long-term affective response, set up a measurement program that reveals attitude changes.
and general company esprit de corps. There are some specific formats for doing this in Chapter 6.

It is important to recognize that evaluations of the long-term, affective results are key elements of good training. How much the trainees retain and how they feel about what they’ve learned are the elements that either promote or destroy your effectiveness as a change agent.

Evaluation Sessions. An important part of the posttraining stage is convincing the organization for whom you work of the worth of your services. Seek out the supervisors and managers of the employees you have trained and ask them for input. Ask them to evaluate the training you’ve done so far. Provide them with follow-up materials they can use to reinforce the skills you’ve taught. In this way you create a climate for change, you develop internal support for that change, you provide the trainees with additional practice administered by their own supervisors, and you gain leverage to increase your effectiveness in the future.

In addition, keep those above you in the hierarchy informed of your results. Solicit their input. Set up a schedule for providing regular reports, by memo or through face-to-face meetings. These managers will be the ones to support your efforts in the future. You want to create an image of responsiveness, so that the company sees your training programs as a service that gets results—results they want. This image will establish your credibility and strengthen your position.

Public Relations. As mentioned in connection with the pretraining stage, public relations is largely a matter of letting people know you’re there; it is developing and keeping a high profile. To do this, you must create, maintain, and monitor an information dissemination network. Make it easy for people to hear about and attend your seminars. If you find that people are not getting the message, supplement or change your method of getting out the information. Use bulletin boards and in-house newspapers or magazines. Announce the training sessions at company social events, meetings (sales, quality circles, union, and so on), and coffee breaks (ask if you can place a poster on the coffee wagon). Post notices in the cafeteria, have handouts at the exits, circulate news by word of mouth—use any creative outlets you have. Use your imagination, but get the word out!

Of course, maintaining a high profile also makes you competitive, so be prepared for some resistance. If your campaign starts to gain attention, some managers who feel threatened may resist the change. If necessary, negotiate for your high profile (see Chapter 16 for guidelines). You are in a strong bargaining position because your business is
to train their employees. Show them how you can get results for them, and give them the opportunity to shape (within reason) the training you’ll do for them.

One final, necessary step to solidify your image is to prepare a formal report on every session you teach. every activity you perform. It can be a written or a face-to-face verbal report (followed by a written summary for the record) and should include as much data as possible. Don’t confuse these reports with the public relations promotions we’ve just discussed, which are for advertising. Formal reports are for the record and intended to create a solid image of both you and your training.

Long-Range Planning

An integral part of your function as a trainer concerned with bringing about changes is long-range planning. There are four phases to planning a change. The first is to analyze the climate for change that currently exists in the company. The next phase is to analyze your goals and determine how you are going to utilize the organizational climate to achieve them (see Chapters 13 and 16). The third phase is to put your plan into action by drawing up a needs analysis, writing proposals, giving the actual training, and so on (see Chapters 3, 4, 5, 6, 9, and 10). The final phase is to set in motion the evaluation and feedback systems that will allow you to update and fine-tune your efforts (see Chapter 6).

Analyzing the Climate for Change

To analyze the present situation, you need to define your organizational culture and determine how it responds to change. There are five dimensions for measuring change in an organization: rate, bias, magnitude, structure, and power. Let’s explore each.

Rate. How fast has change taken place in the past, and how long do you think it will take to make the changes you propose? Ask yourself these four questions:

1. What changes in management are imminent? What happens when management personnel are replaced?
2. When was the last senior-level reorganization? What management changes resulted? How did those changes impact on the rest of the organization?
3. Which new ideas have been accepted into the organization during the past eighteen months?
4. What current ideas have yet to take effect? How long have they been in the offing?

Then choose an innovation (such as a new procedure begun by a new manager) and track it until it is in universal use. These findings will enable you to draw some conclusions about the rate of change.

Bias. Changes in operation are shaped considerably by the biases of those people in power. In fact, any change you plan will have to be modified to flow in the direction of bias in your organization. To discover such leanings, you will need to ask yourself these four questions:

1. How do things get done in the organization? You are not asking what is being done but rather how. (This is a question of style, and it therefore indicates bias.)
2. How does management style differ among the most powerful people?
3. Within the last two years, have any middle- or upper-level managers left the organization because of differences in style? (This is another question of style—how things get done, not what gets done.)
4. What past training programs have failed despite initial management support and enthusiasm?

Then compare the educational, ethnic, familial, social, and professional backgrounds of three or four of the most powerful middle managers. Do the same for some in the top management team. Compare the results to predict potential friction or compatibility. This information will give you an idea of the underlying management biases and whether they will continue into the future.

Magnitude. What kind of change has succeeded or failed historically in the organization? If only minor changes succeed, you’ll have to build a major change very carefully. Otherwise it may be wiser to subtly ease in the smaller changes you want. To determine which approach to use, you will need to know the answers to these questions:

1. What apparently sound ideas in the past five years have failed to take hold?
2. Which pet projects of top management have been sidetracked by middle management’s failure to implement them effectively?
The Function of Training

3. Which past training programs succeeded in bringing about change?
4. Have any proposed changes been dropped or simply forgotten because of resistance from the rank and file?
5. What is the largest major change that has taken place under the present management? How was it managed?

These answers will give you an idea of how receptive management will be to either large or small changes in operations.

Structure. How a proposed change is packaged usually becomes a major factor in its ultimate success. Advertising agencies, for example, spend much creative time determining how to present a new product so as to make it most appealing. New ideas in the corporate culture are no different. There are two forces that come into play when presenting a new idea: formal corporate channels of communication and informal routes such as the grapevine, friends in key positions, and the like. Anyone familiar with the military or government agencies knows the difference between the two as well as the powers and limits of each. Corporate cultures are the same, and the channel you choose to bring about a change impacts heavily on how well the change succeeds. To map your corporate structure you will need to answer the following questions:

1. What are the formal channels of communication in your organization?
2. What are the informal channels of communication and how are they approached?
3. Who, regardless of position, are the people most effective at packaging ideas and selling them to top and middle management? How do they package what they want done?
4. Who, regardless of position, are the people with reputations for getting things done? And what channels do they use to do so?
5. What new procedures or ideas have been extremely successful in recent months? Who originated them? Who sponsored them? Who packaged them? How were they eased through the organization?

These answers should provide some ideas for packaging your proposals so they are accepted and ultimately succeed.

Power. Who holds the real power in the company? That is, who will the rank and file follow? That person is not always the designated
The real power is in the hands of the person on whom the group bestows its trust. In fact, power is often the most important of the five factors mentioned here. Certainly, a powerful person is a great ally in making changes, and you are doomed to almost certain failure if that person openly opposes you. In identifying where the power lies, you must find the answers to these questions:

1. How has top or middle management used the company grapevine? Do they fight it, or do they promote it? Does the grapevine ignore them?
2. Who in the company, regardless of position, defers to the senior secretary?
3. Whom does the organization’s senior secretary report to?
4. Who has inordinate power for the position he or she holds?
5. Who gets things done? Who are the people always powerless to achieve their ends?

These answers will point you in the direction of where the power is that can help you achieve your goals. The answers to all these questions should provide you with an effective map of your corporate culture. Use the map to plot the route for reaching your goals as an agent or change in the company.

Summary

The ideas in this opening chapter oriented you to the basic premise of this book: that the purpose of training is to produce change and the role of the trainer is first and foremost that of an agent for change. There is a strong human tendency to resist change, so a crucial part of training must be to motivate trainees to learn. Motivation is done by creating an environment conducive to learning, in which existing behavior must be “unfrozen,” then changed and “refrozen” as new behavior.

To be fully effective, the trainer must control the pretraining, training, and posttraining environments. Gainung control of pretraining involves a formal needs analysis, in-house networking, and company-wide publicity. Controlling training incorporates personal leadership, planning, methodology, and an effective physical environment. Maintaining control of posttraining calls for formal evaluations, assessment sessions, and additional public relations. Lastly, since changes seldom come about suddenly, the chapter included a format for assembling long-range plans for changes and described how to determine the corporate climate for change.
How Motivation Affects Instruction

There is more nonsense, superstition, and plain self-deception about the subject of motivation than about any other topic.
—Thomas F. Gilbert

Like the national economy, human motivation is a topic that people know is important, continuously discuss, and would like to predict. We want to know why people do what they do. But just as tomorrow's inflationary trend seems beyond our influence and understanding, so too do the causes of human behavior evade any simple explanation or prescription. We have invented a word to label this elusive topic, and we call it motivation, but even its definition continues to baffle the most scholarly of minds. Most scientists can agree that motivation is a concept that explains why people behave as they do (Weiner, 1980a). After that very general understanding, any more specific discussion of the meaning of motivation becomes a cornucopia of differing assumptions and terminology.
The biggest problem with motivation is we cannot see it and we cannot touch it. It is what is known in the psychological literature as a hypothetical construct, an invented definition that provides a possible concrete causal explanation of behavior (Baltes, 1967). Therefore, we cannot directly measure motivation, and as long as this state of affairs lasts, there will be many different opinions about what it really is. Nonetheless, we do know that understanding why people behave as they do is vitally important to helping them learn, and psychology has made many inroads to the knowledge and skills that are useful for this purpose. Most psychologists concerned with learning and education use the word motivation to describe those processes that can (a) arouse and instigate behavior, (b) give direction or purpose to behavior, (c) continue to allow behavior to persist, and (d) lead to choosing or preferring a particular behavior. Thus, when we as instructors ask questions such as “What can I do to help my learners get started?” or “What can I do to help them put more effort into their learning?” or “What can I do to help them want to learn what I have to offer?” we are dealing with issues of motivation. Also, we continuously realize that the motives people bring with them to the learning situation strongly affect how and what they learn. This notion is quite accurate because a motive is any condition within a person that affects that person’s readiness to initiate or continue an activity. For example, a person experiencing a need to understand how to be more physically fit has a good motive to read a book about physical fitness.

Although there have been some attempts to organize and to simplify the research knowledge regarding motivation to learn, instructors have received very few practical suggestions as to how to cohesively and consistently employ in their daily instruction the most useful elements of a large array of often conflicting information (Wlodkowski, 1981; Reigeluth, 1983). As a result, they have had to rely upon what has been traditionally used to enhance motivation for learning—intuition, common sense, and trial and error. Unfortunately, sometimes this approach leads to a rigid dependency on curriculum guides and an increased interest in a “bag of tricks” approach to instruction—the use of unrelated and often manipulative devices to spark learner interest in learning.

This is, indeed, troublesome for instructors. With no underlying motivation theory or model with which to organize and build motivational skills, they cannot easily change their practices, and what they learn about motivation from experience is often fragmented and unconnected with instruction. There are a significant number of well-researched ideas and findings that can be applied to learning situations according to motivation principles. The following chapters will thoroughly discuss many of these motivational strategies and present a method to organize and apply them.

Why Motivation Is Important

We know motivation is important because, even without any specific agreement on the concept’s definition, we know that if we match two people of the same ability and give them the same exact opportunity and conditions to achieve, the motivated person will surpass the unmotivated person in performance and outcome. We know this from personal experience and observation. We know this as we know a rock is hard and water is wet. We do not need teams of research findings to establish this reality for us. When research is consulted, our life experience regarding motivation is generally supported. To put it quite simply, when there is no motivation to learn, there is no learning (Walberg and Uguroglu, 1980). However, this extreme is not frequently the case, because motivation is not an either/or condition. It is often present in some degree, but when motivation to learn is very low, it is generally safe to assume that potential learning achievement will to some extent be diminished.

There is no major research study that thoroughly examines the exact relationship between adult motivation and learning. The best reviews and analyses of the relationship of motivation to learning are found in youth education. Here, there is substantial evidence that motivation is consistently positively related to educational achievement. Uguroglu and Walberg (1979) analyzed 232 correlations of motivation and academic learning reported in forty studies with a combined sample size of approximately 637,000 students in first through twelfth grades. They found 98 percent of
the correlations between motivation and academic achievement were positive. They also noted that in their opinion the strength of the relationship between motivation to learning is currently underestimated for historical, technical, and theoretical reasons (Wallen and Ungermann, 1980). It appears reasonable to assume that if motivation bears such a significant relationship to learning for students as old as eighteen years of age, it probably has a similar relationship to adult learning. In support of this assumption, these researchers found that the relationship between motivation and learning increased along with the age of the students, with the highest correlations being found in the twelfth grade.

Motivation is not only important because it is a necessary causal factor of learning but because it mediates learning and is a consequence of learning as well. Historically, instructors have always known that when learners are motivated during the learning process, things go more smoothly, communication flows, anxiety decreases, and creativity and learning are more apparent. Instruction with motivated learners can actually be joyful and exciting, especially for the instructor. Learners who complete a learning experience and leave the situation feeling motivated about what they have learned are more likely to be interested in what they have learned and more likely to use what they have learned. It is also logical to assume that the more that people have had motivating learning experiences, the more probable it is that they will become lifelong learners.

To be realistic, it is important to point out that although motivation is a necessary condition for learning, there are other factors such as ability and quality of instruction that are necessary as well for learning to occur. If people are given learning tasks that are beyond their ability, no matter how motivated they are, they will not be able to accomplish them. In fact, there is a point of diminishing returns for all of these mandatory factors, including motivation. For example, if learners are given an assignment that is difficult but for which they have the necessary capabilities, there is a point at which their abilities can carry them only so far before effort (motivation) is necessary to take them further, whether this be extra practice or increased study time. In terms of motivation, this could happen with ability or quality of instruction. Spots is a

common example. There are many athletes who make tremendous sacrifices and training efforts but finally reach a level of competition where their conditioning or speed is insufficient for further progress. Another case in point relates to the quality of instruction. A learner who wants to do well in math and has the ability and motivation but is limited by a complicated, old-time textbook and an instructor who is unavailable for individual assistance. It is wise not to underestimate or expect too much of motivation. Such a view can limit our resources and increase our frustration.

It is difficult to scientifically understand exactly how motivation enhances learning and achievement. The nearest thing we have to a direct measure of it is effort (Heller, 1953). People work longer, harder, and with more vigor and intensity when they are motivated than when they are not motivated. Time spent and effort involved in learning is definitely related to achievement (McLoughlin, 1981), so that explains some of it. Also, there is probably greater concentration and care in the process of learning while that time is being spent. Motivated learners are more competitive. They would make them more psychologically open to the learning material and enhance information processing. It is much easier to understand what you want to understand. Finally, motivated learners get much more out of an instructor than unmotivated learners do. As instructors, we are much more willing to give our best efforts when we know our learners are giving their best efforts. It is important not to forget the reciprocity of this relationship and our responsibility to initiate it.

How Motivation Relates to Adult Learners

Adults are defined throughout this book according to two criteria offered by Knowles (1980). First, a person is adult to the extent that that individual is performing social roles typically assigned by our culture to those who consider adults — the roles of worker, spouse, parent, responsible citizen, soldier, and the like. Second, a person is adult to the extent that that individual perceives himself or herself to be essentially responsible for her or his own life. Among the over twenty internationally recognized theories of
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Learning, but the motives just cited tend to dominate there entry into group learning situations. There is also a considerable amount of research regarding barriers to adult learning, reasons why they do not participate in learning activities. Among the various barriers studied, the one most pertinent to the content of this book is the dispositional barrier. Dispositional barriers are those related to attitudes and self-perceptions of people regarding themselves as learners. They are most commonly found barriers in this area relate to age and educational background. It is not uncommon for older adults to believe they are too old to begin new learning activities (Carp, Peterson, and Kool, 1974). Also, adults with poor educational backgrounds often lack interest in learning or confidence in their ability to learn. It was once thought that aging was a definite handicap to learning. If there is an age limit on learning performance, it is not likely to occur until around age seventy-five, when deterioration of bodily functions most significantly begins to set in (Kidd, 1973). This does not mean that aging does affect the body until seventy-five, but that the compensation for this gradual decline can be offset by sheer determination. Eyeglasses, hearing aids, increased illumination, and increased time for learning are some of the ways to equalize learning opportunities for older adults. The time required for learning new things increases with age because, on the average, older learners perceive, think, and act more slowly than younger learners. However, there are substantial individual differences, and speed of response by itself should not prevent anyone from learning what that individual wants to learn (Cross, 1981). Knox (1977) concludes that when adults can control the pace, most of them in their forties and fifties have about the same ability to learn as they had in their twenties and thirties. Many people believe that because of the decline in vision, reading is a serious problem for older adults. However, in the absence of disease or serious impairment, the normal physical changes of the eyes can be accommodated through the use of eyeglasses and increased illumination (Cross, 1981). Hearing has also been well researched. There is a hearing loss as people become older and a translation problem as well. Rapid speech is more difficult for older adults to decipher.
But these changes can be treated and should not have much negative impact on learning capabilities until age sixty-five or older.

In terms of intelligence, it is safe to summarize that normal, healthy adults can be efficient and effective learners well into old age. There have been two types of intelligence that have been found to show different patterns in aging (Cattell, 1962). The first, fluid intelligence, is measured through such abilities as memory span, spatial perception, adaptation to new or novel situations, common word analogies, and abstract reasoning. It is least dependent on experience and education and appears to decline with age. People seem to perform best in their youth on tasks requiring quick insight, short-term memorization, and complex interactions.

The second, crystallized intelligence, is measured through such abilities as vocabulary, general information, arithmetic reasoning, and reading comprehension. It is based on acculturization, including formal education and knowledge of the cultural and intellectual heritage of society. Crystallized intelligence increases or remains stable up to about age sixty. After this age, it is still capable of growth if the person is actively involved in intellectual pursuits. Fluid and crystallized intelligence are complementary. Research into both of these types of intelligence confirms the commonsense approach of many societies who value the wisdom of the aged but rely on youth for quickness in learning new skills (Cross, 1991). As Knox (1977, p. 121) succinctly states, "During adulthood, as fluid intelligence decreases and as crystallized intelligence increases, general learning ability remains relatively stable, but the older person tends to increasingly compensate for the loss of fluid intelligence by greater reliance on crystallized intelligence, to substitute wisdom for brilliance."

Memory has received a good deal of attention by researchers in learning. Short-term memory seems to be more of a problem for older adults than long-term memory. When material is learned well and new information is integrated with previously learned material, memory appears to remain stable during most of adulthood (Moonen, 1972). Older adults seem to have their greatest problems memorizing meaningless material, complex material, and learning something that requires reassessment of old learning (Cross, 1991). It is believed that meaningless material is poorly retained because

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older adults are poorly motivated to learn it and it is difficult for them to connect this material to previously retained learning. Memorization of complex material on a short-term basis seems to take them longer because they have to scan large stores of previous information to find proper associations and this interferes with recall. This is why distraction is so difficult for them. Generally, older learners will be more likely to have the most problems with initial learning and subsequent recall when learning activities are fast paced, complex, or unusual. Cross (1981, p. 161) has some very practical suggestions to help older adults with memorization: "First, the presentation of new information should be meaningful, and it should include aids to help the learner organize it and relate it to previously stored information. Second, it should be presented at a pace that permits mastery in order to strengthen the original registration. Third, presentation of one idea at a time and summarization of competing intellectual demands should aid original comprehension. Finally, frequent summarization should facilitate retention and recall."

In terms of personality, most people show continuity throughout life beginning with adolescence through late adulthood (Egan and Day, 1972). In a longitudinal study these researchers found style of cognitive engagement (cerebral bums, unconventional thought, wide-ranging interests, cultural reaction, pride in objectivity, and intellectual level) to be among the most stable of all characteristics. Thus, people who are enthusiastically involved in cognitive activities during adolescence will probably stand out in a similar fashion during middle age. As people grow older, accuracy becomes more important to them and there is a greater dependence on previously learned solutions (Cross, 1981). Youthful learners are more likely to engage in problem solving with higher risk behavior and trial-and-error solutions. There is increasing possession in elderly learners, which means instructional processes will have to be flexible and nonthreatening to engage them and prevent withdrawal.

There are numerous other generalizations about adult development and characteristics that could be made relative to motivating instruction. However, these pertinent summaries are distributed throughout the textual material that follows in order to
more clearly articulate their relationship to specific motivational strategies. In this manner, they become more sensible guidelines for
the effective practice of instructional methods. For those interested in adult development and learning as a specific topic, there are two excellent resources available: Knowlton's (1971) Adult Development and Learning, and Graetz's (1981) Adults as Learners.

Critical Assumptions for Helping Adults Want to Learn

With a hypothetical construct as broad and complex as motivation, there is always room for controversy and argumentation. One of the things most likely to produce misunderstanding and reduce communication is the receiver of a message to be unclear about the assumptions on which a message is based. This increases the tendency toward disagreement because of a lack of clarity rather than a lack of logic. The following assumptions are offered so that the reader can have a better understanding of why the numerous suggestions that this book offers for motivating instruction have been selected. These assumptions form a substantial part of the foundations and rationale for the theories and approaches that are advocated in this book.

The first assumption is that people are always motivated. They may not be motivated to learn, but they are motivated to do something. People are active in their relationships with their environment from earliest infancy onward (White, 1959). They constantly construct new meanings and interpretations from the events in their environment (Westbrook, 1974). It is important to realize because too often instructors dismiss particular learners as "not motivated." This implies a lifelong block beyond assistance and, worse, the instructor's sense of helplessness. It is more accurate to say, "This learner is not motivated to learn with me." This implies there may be a difficulty with relation, the instructional process, or, perhaps, some personality dispositions within the learner. It may be the issue more of a problem to solve than a hopeless case to dismiss or to withdraw from.

The second assumption is that people are responsible for their own motivation. We cannot directly motivate learners. We can make things stimulating and attractive. We can provide opportu

nity and incentives. We can certainly influence the motivation, but we cannot totally control their motivation. What we do during instruction is mediated by the learners themselves (Weinstein, 1974). There is no direct line of control like a radio switch between instructor behavior and learner motivation. What we do with learners is perceived by them and filtered as well as mediated by their values, beliefs, and judgments. These kinds of elements determine the final outcome of learner motivation. If these were not so, there could be no real responsibility on the part of adults for learning.

They would be more like puppets than people. They would lose real pride in their choices and perseverence. Seeing learners as responsible allows us to develop mutual respect and interdependence with them. It also avoids total blame in either direction and helps to develop mutual problem-solving when motivation is lagging. This assumption gives us the right to expect their cooperation as well as ours in making learning the reciprocal relationship it normally is.

Thirdly, it is assumed that if anything can be learned, it can be learned in a motivating manner. There must be some degree of motivation to formally learn anything, even if that motivation is limited to merely paying attention (Woolf, 1969). Once we have someone's attention, there are a myriad of possible influences that can be used to sustain attention and interest. In a persuasive way, national advertising is a testimony to the human ability to make anything attractive and appealing. If something is worth an instructional effort, one can assume that there is some degree of substance to the material. It must meet some kind of defined need or there would be no reason for making it the purpose of instruction. Finding that need, affirming it, and effectively developing it through the instructional process is no doubt a challenge but not an impossible one.

The fourth assumption is that there is no one best way to instruct. There are certainly better ways than others, but such variables as individual learner differences, type of learning task, learning environment, instruction style, and unconscious motives all work together in such complex ways that no scientific or psychological theory has yet discovered a way to make learner motivation consistently predictable through any particular method.

**Design Models**

Successful training depends on the training officers' ability to work closely with the line management in constructing a programme which is relevant to the needs of the employees and minimizes their learning difficulties (Kenney et al. 1972). They further defined a training programme as: 'an interpretation of the training specification in terms of units of instruction or learning, set out in chronological sequence and showing the time allowed for each'. These are the elements that make up the components of a training design model.

In training, "model" refers primarily to graphic representations of systems of process and the relationships among their elements (Nadler, 1986). In the applied sciences, models are developed to invent new ideas and processes, and to simplify complex processes (Pfeiffer et al., 1982). The usage of a model is to construct the reality to a much simpler representation and be able to use them to predict and explain phenomena with a degree of accuracy (Atkins, 1983).

Nadler (1986) further emphasizes that for training designed model, it must be related to the job of the
Trainee involved. Present performance on the job is an essential part of such a model. Therefore a training model must be comprehensive by showing a pattern of relationships among the elements of training. As explained by Doll (1992), a comprehensive design means that the training elements must be defined; the means used for selecting and organizing learning experiences must be stated; and the roles of the trainers, and other training personnel must be indicated.

The main function of training design model is to help designers ensure that the learners and sponsors of the training programmes will achieve their learning intents. Design models are based on ideal conditions (as identified by the model’s author) that will provide the greatest possibility of potential success when used (Wiggs, 1984). As mentioned earlier, a design model can be viewed as depicting a system of interacting and independent variables that form the learning programme. Wiggs (1984) further describes that every learning programme has the following interrelated variables:

1. objectives, 2. learners, 3. instructional materials or aids, 4. programme sponsors, 5. content, 6. instructional strategies, 7. learning facilities or aids, and 8. instructors/instructional media.

Training design model is made up of an organization systems. This is supported by Hanna
in stating that a system is an arrangement of correlated parts which describe interdependent events forming an entity. The systems then can be identified by their exhibition of four major characteristics (Atkins, 1983). Firstly, they are an assembly of components and secondly, the parts are affected by being in the system and are changed if they left it. The third quality of systems is that they are dynamic and lastly, systems serve as a guide, they have specific purposes.

Designing Operations:

The designing operation in a training system is influenced by the philosophical considerations transcended and the assumptions withheld (Doll, 1982). But how the systematic designing is done is similar to that of the other programme. According to Gammuto (1980), the tools used are different, but the procedure followed is the same.

In developing the training programme, the three phases of design are:

1. Deriving and describing the objectives in a meaningful form.
2. Developing lessons and materials designed to meet the objectives and trying out the course.
3. Determining how well the objectives were achieved and improving the course to improve the result.
In any design model, the prospective learners must be considered as a subsystem. Likewise, each of the interacting components is conceived as being a subsystem of the entire training system. Therefore, a systems approach design model begins by identifying the individual parts and seeking to understand the nature of their collective interaction. Doll (1992) concurs and elaborates that the systems approach designing provides information about subject matter, educational level, the target group, the object of the efforts, specific activities planned, support services, and the like.

Hanna (1988), summarizes the various critical elements of the organization of a systems model are:

1. **Boundary**
   - All systems have a border or boundary that differentiate them from others. Although the boundary tends to "fence off" one system from another, it has openings to allow for interaction with the environment.

2. **Purpose/Goal**
   - All systems have a purpose or a reason for existing. This refers to the organization's aim that meets its own, as well as environmental needs.
3. Inputs

   Materials and energy must be incooperated from the environment.

4. Transformation

   This process refers to how individuals divide tasks, communicate, and interact with one another.

5. Outputs

   Materials and energy are exported to the environments in fulfilling the purpose contract.

6. Feedback

   This term refers to the information inputs that measure the acceptability of both outputs and the purpose or goals. Its function is to know whether or not the system is on target.

7. Environment

   Everything outside the system's boundary is defined as the as the environment. An organization needs to give constant attention to its relationship with environment.
Type of Design Models

Wiggs (1984) explains that design models are constructed, by their authors, to be either descriptive or prescriptive in nature. A descriptive design model describes the design procedures and the variables related to the learning programme. The designers are not required to follow the sequential steps rigidly but must be aware of the related interacting and independent variables throughout the design. Whereas, a prescriptive design model prescribe the step-by-step procedures must be followed in implementing the learning programme. There is no leeway for modification or adaptation in this model.

Design models are often referred to as being open or closed system model (Madler, 1986; Wiggs, 1984). As illustrated by Wiggs (1984) a descriptive design model is better known as the open systems design while a prescriptive design model is also known as the closed systems model.

The advantages of both the open and closed design models for learning programmes are:

1. Learning is job centered.
2. Learning programmes have precisely stated objectives.
3. Instruction is based on the learner’s needs derived through systematic analysis.
The systems approach to training is a result-oriented process designed to ensure that training is both relevant and effective (Wentling, 1992). Generally, training process encompasses the planning, implementation and evaluation phases.

The planning phase of training is what Wentling (1992) refers to as curriculum development. Tyler's classical approach to curriculum development has had a considerable influence on the curriculum field. His formulation of four guiding questions became widely known as the framework for rational curriculum development (Bellon, et al., 1982). Tyler's rational approach in 1949, has since been strengthened by Taba, Goodlad, and other curriculum leaders.

Over the years, Tyler's model has been supplemented and tightened in practice. The revised model as suggested by Doll (1992), consists of the following elements:

1. State the need for proposed design. Need must be educational, social, and or personally developmental.

2. Indicate the objectives the design is to serve. State a few prime or major objectives of the design, making them succinct and clear.

3. State the subject matter content to be used in the design and the organization of the content for teaching and learning.
4. Provide examples of learning experiences and show how these experiences are organized to profit pupil learning.

5. Propose an evaluation scheme that fits the objectives and the learning experiences.

In the light of training, Wentling (1992) states that curriculum development is a process used to identify training needs, prepare content, select methods, for training and trainee assessment. Thus the result of curriculum development is a training plan and lesson plan.

Types of Training

Camp et al. (1986) states that training should be conducted based on current and/or future job requirements. Ideally, according to the authors, training should have a dual goal of organizational effectiveness and an improved work experience for the job incumbent. Since both individuals and organizations should benefit from training, there are many types of training categorized by various authors. The classifications are based on each authors emphasis and assumptions. There is no clear-cut distinction on its categorization.

Broadly, training in organization is classified into formal training and informal training by Tracy

**CONTENT ANALYSIS OF TRAINING DESIGNS**

The training design is comprised of eight interrelated components that ordered under three major training processes: planning, designing and implementing, and evaluating and following-up. The eight training components and subcomponents subsumed under each process provide a holistic systems approach to training and transfer of learning. The discussion that follows focuses on brief summaries of the conclusion of each design.

**Introduction**

Fifteen designs that deal with processes relevant to training in adult education were reviewed (Aslam, 1987; Atkins, 1983; Boone, 1985; Bramley, 1989; Buckley et al. 1990; Camp et al., 1986; Friedman et al., 1985, Gammuto, 1980; Goad, 1982; Goldstein, 1974; Goldstein, 1986; Murk et al., 1988; Nadler, 1987; Robinson et al., 1989; and Sork et al., 1986).
The similarities and differences will be noted and an overall conclusion is drawn. This method of approach is adapted from Boone's (1985) and Sork and Buskey's (1986). This format provides a review of the respective conceptual designs for comprehension and analysis. The fifteen designs are incorporated in Table 37, (Appendix B) by alphabetical order of the author's surname. Each design is organized according to three basic subprocesses of training/programming: planning, implementing, and evaluating and following-up.

Aslam (1987)

The author emphasizes training as an important input in the achievement of integrated rural development (IRD) goal. It enhances the efficiency and effectiveness of people at work for IRD programmes. This is done by increasing their functional knowledge and skills and changing attitudes required for the accomplishment of the expected desired tasks.

A systems approach design was suggested in implementing the IRD training programmes encompassing the following steps: 1) Assessment of training needs; 2) Determination of training objectives; 3) Selection
and organization of training contents; 4) Selection of training methods and techniques; 5) Implementation of training programmes; 6) Monitoring and evaluation; and 7) Follow-up.

The main feature of this model is that it focuses on the training needs assessment. Citing Khemani’s (1983) simple approach for training needs assessment, it represents a detailed systematic way of deriving training needs.

Conclusion: The seven components of Aslam’s training design is used as a base for building-up the proposed generic design. The seven components suggested make up the essential components of a training design.

Atkins (1983)

Atkins deliberates on the importance of systems approach model to training. His paper discusses the understanding of general systems theory, characteristics of systems, types of systems approach to training, and systematic models. According to Atkins, defining objectives and identifying suitable methods of evaluation are two most important aspects of systems approach application. He cites Eksstrand
Annette, Mellor and Checkland (1972) stressing the importance of identifying objectives by job/problem analysis. Atkins' training system after text/strand is as follows: 1) Analyze the job; 2) Prepare job specification; 3) Write training objectives; 4) Determining training content; 5) Select methods and media; 6) Conduct training; 7) Validate training; and 8) Modify or update training as necessary.

Conclusion: Atkins' model concurs with that of Aslan's, incorporating all the seven training components. The only difference is that for the 'Assessment of Training Needs' Component of Aslan's model, it was further categorized into two specific components namely, "Analyze the Job" and "Prepare Job Specification" by Atkins' model. Therefore the seven training components are used as the basis for further design development. Atkins introduces the element of systems approach model to training and this is also used in deriving a proposed generic design.

Boone (1985)

Boone compares and evaluates nine programme planning models [(Beal et al. (1966); Boone et al.]}
Boyle (1981); Freire (1970); Houle (1972); Kidd (1971); Knowles (1970); Lippitt et al. (1958) and Tyler (1971) and classifies them according to context, scope, philosophy, perspective, applicability, and primary themes. The most basic similarity in the models he studied is that all included four basic programming processes, as such: 1) Defining problem or need; 2) Setting objectives, goals and means; 3) Conducting formal and informal learning activities; and 4) Explicitly or implicitly evaluating the process. According to Boone, each of the nine models is adaptable to most adult education and training contexts.

Conclusion: Even though Boone’s model covers only four components of the suggested model, but these components were general enough to encompass the basic main elements of training design. For better clarity and specificity of a proposed generic design, the seven components are still being used as the basic training components.

Bramley (1989)

The author traces the evolution of training model which originated from the traditional approach of training the individual to the one of organizational
change. Generally, training is planned using a process such as: 1) Identification of training needs; 2) Training objectives; 3) Selection and design of programmes; 4) Carry out training; and 5) Evaluative feedback loops.

Bramley proposes the "Systems approach" to training which implies the sub-systems within the training cycle interact. In this model, the author details out the identification and analysis of training need because it is fundamental to any training model. Citing McGhee and Thayer who suggested analysis at three levels: the organisation, job and person, and the second area which needs attention is the sequencing of learning which emphasizes issues related to the delivering of training. The author stresses the importance of sequencing the training programme and transfer of learning.

Conclusion: Bramley's model covers five components out of the proposed seven training components. The third component of Bramley's model on "Selection and design of programmes" covers two components of the proposed model, that is, "Derive training content" and "Design methods and training materials". While the "Evaluation
feedback loops” covers the “Monitoring and Evaluation” and “Follow-up and Revision” components. This concludes the agreement between the models in proposing the seven training components. Bramley also proposes the elements of “Systems Approach” to training.

Buckley et al. (1990)

Buckley and Caple also propose the systems approach model to training. They stress on a logical relationship between the sequential stages in the process of investigating training needs, designing, delivering and validating training.

This model highlights the learner-centered learning, which enable effective transfer of learning to become a reality. According to these authors, there is no single approach to training. The important thing is to exercise the best techniques in investigating performance problems and delivering training. Underlying a practical model is some good theory, and both are interrelated. Principles of learning and motivation are among the considerations proposed by the authors.
Stages in a systematic approach to training are:

1) Establish terms of reference;
2) Further investigation;
3) Knowledge, skills and attitudes analysis;
4) Analysis of the target population;
5) Training needs and content analysis;
6) Develop criterion measures;
7) Prepare training objectives;
8) Consider principles of learning and motivation;
9) Consider and select training methods;
10) Design and pilot training;
11) Deliver the training;
12) Internal validation;
13) Application and external monitoring of training.

Conclusion: Buckley et al.'s model further details the training components into 14 stages. The uniqueness of this model is that it builds in some theory of learning and motivation in the design. The 14 components of this model only fit into the six components of the proposed generic training model. Anyhow, this model introduces new components which were not included in the previous models, that is "Develop criterion measures". This is being added to the proposed seven generic training components, totaling eight components. The newly generated proposed training components are:

1) Identify training needs,
2) Define training objectives, 3) Derive training content, 4) Develop criterion measures, 5) Designing methods and training materials, 6) Conduct training, 7) Monitoring and evaluation, and 8) Follow-up and revision.

Camp et al. (1986)

The authors propose an "Open systems theory" perspective for training denoting a system that interacts with its environment. They believe that evaluation is merely another data collection activity whereby the outcomes are translated into subsequent needs analysis. Descriptive and evaluative feedback are built into this model and should be solicited throughout the steps of needs assessment, programme development, and delivery.

The sequential model of an effective training process encompasses the following steps: 1) Data gathering/diagnosis; 2) Establish objectives; 3) Identify resources; 4) Develop curriculum; 5) Plan logistics; 6) Perform training; 7) Facilitate transfer of learning; and 8) Data gathering/evaluation.
Conclusion: Only four out of eight training components of Camp et al.'s model match with the eight proposed training components. Being on "Open systems theory", this model emphasizes more as the descriptive and evaluative feedback element. Therefore, there is no additional component to the currently proposed eight training component.

Friedman et al. (1985)

The authors take a comprehensive view of training by integrating theory and methodology; addressing both the content level and the process level of training; and matching training methods and learner needs appropriately. The authors also recommend a trainer-participant relationship approach of training.

This model applies two modes of training, that is, the directive approach and the adaptive (receptive) approach. Diagnosing the situation uses an adaptive approach while the instructional process involves a directive approach.

There are six major stages of the training process, namely: 1) Awareness of need; 2) Analyzing
problem: 3) Knowing options; 4) Adopting a solution; 5) Learning a skill; and 6) Integrating in the system.

Conclusion: Only two out of the six training components of this model can fit into the proposed eight training components, that is, "Identify training needs" and "Conduct training". The approach of this model training process is eight different from that of the proposed. Therefore, the generated proposed training components remain the same.

Gammuto (1980)

According to Gammuto (1980), the development of a system for training is a decision-making operation. Decisions have to be made about what should be learned, how, by whom, when and where; how learning should be evaluated and improved, and what resources should be involved in preparing for, providing for, and evaluating the program's effectiveness.

Gammuto reinforces that a system must be designed to act upon the input through a series of processes in the appropriate sequence to achieve the desired output.
"System Approach" proposed by Gammuto involves the following ten essentials: 1) Know the goals, policies, procedures and practices; 2) Define the training objectives; 3) Spell out the training policy; 4) Measure the learners; 5) Design the course and obtain the training 'text'; 6) Set up the physical facilities, obtain aids, etc.; 7) Select and train the instructors; 8) Train, that is, give the learners an opportunity to learn; 9) Measure results and compare with the training objectives; and 10) Analyze the programme and compare the programme results against the established goals.

**Conclusion:** Eventhough Gammuto's model proposes simple and clear-cut training components, only five components match with the proposed eight training components. The other five components of Gammuto's model are partly build into the other remaining proposed training components. Therefore, there is no addition to the proposed training components.

Goad (1982)

"Delivering Effective Training" by Goad (1982) is a condensation of key points taken from everyday
the design of systematic programmes. In this model, Goldstein places emphasis on the evaluation process to be centered around two procedures: 1) establishing measures of success (criteria) and 2) using experimental and non-experimental design. The criteria are based on the behavioural objectives, which were determined by the assessment of instructional need. In addition to criterion development, the evaluation phase must also focus on the necessary design to assess the training programme. Goldstein stresses that the rigour of the design affects the quality and quantity of information available for evaluation.

The components of the improved instructional system approach are: 1) Needs Assessment; 2) Organizational analysis; 3) Person analysis; 4) Instructional objectives; 5) Selection and design of instructional programmes; 6) Training; 7) Development of Criteria; 8) Use of Evaluation Models: a. Individual difference; b. Experimental content; 7) Training validity; 8) Transfer validity; 9) Intra-organizational validity; and 10) Inter-organizational validity.
Conclusion: There is no additional new training component generated from this model. Therefore, the number of the proposed training components is still the same.

Kurt et al. (1988)

An extensive review of the literature on programme-planning models for continuing professional training was conducted by the authors. The findings revealed that most models reviewed and analyzed seem to follow the traditional, linear, and sequential process which limits flexibility in designing the programme.

The authors propose an alternative model known as 'systems approach model' or SAM which consists of five components that are dynamically interrelated yet independent. SAM allows greater flexibility, practicality, and creativity than linear model. It is unique in that it allows planners to work on two or three components simultaneously and to deal with the situation as it is, rather than as it might be.
The major components of the systems approach model are:

1. Needs assessment;
2. Instructional planning and development;
3. Administration and budget development;
4. The implementation phase; and
5. Evaluation procedures.

**Conclusion:** The five training components of this model agree with that of the proposed training components. There is no changes in the eight training components proposed. As mentioned by Atkin, Boona, Bramley, Gammuto and Goldstein about the element of system approach, to training this is further reemphasized by Murk et al.'s model. This element is also being built into the designing of the proposed generic training model.

Nadler (1987)

Nadler (1987) offers the Critical Events Model (CEM), an open model, which was the results of his 15 years practicing in adult learning. An open model is one that considers the existence of outside factors which can have an impact on the design process. Prior
designing the programme, it is not possible to identify and determine the variables. It is a kind of working hypothesis which provides possible courses of action and anticipations of outcomes.

Nadler emphasizes that CEM depicts what may happen but cannot be used for predictions. But after using it several times, the responses can be anticipated from various levels of the organization as they are being involved in the design process.

The Critical Event Model composed of the following components: 1) Identify the needs of the organization; 2) Specify job performance; 3) Identify learner needs; 4) Determine objectives; 5) Select instructional strategies; 6) Select instructional strategies; 7) Obtain instructional resources; 8) Conducting training; and 1-8) Evaluation and feedback.

Conclusion: Nadler’s model concurs with that of the proposed design except without the inclusion of the "Follow-Up and Revision" component. The proposed training model components are: 1) Identify training needs; 2) Define training objectives; 3) Derive training content; 4) Develop criterion measures; 5)
design methods and training materials; 6) Conduct training; 7) Monitor and evaluate training; and 8) follow-up and revise training.

Robinson et al. (1989)

According to Robinson and Robinson (1989), the training for impact approach emphasizes that the business results will occur due to the increased in skills or knowledge. In this approach it is mandatory to conduct the front end of training delivery assessment and measurement the results is also a requirement. This is results-oriented and needs-driven training approach.

The unique feature of this approach is that its training implementation are characterized by a partnership with a client-manager, identification of a business need for the training, assessment of the situation to specifically identify required skills and knowledge, preparation of work environment to ensure that it will support the new learning, and measurement of results.

Steps for the Training-for-Impact approach are:
Step 1) Identify business need; Step 2) Identify and
form a collaborative relationship with the client:

Step 1) Conduct an initial project meeting; Step 4) conduct a performance effectiveness assessment; Step 5) Conduct a cause analysis; Step 6) Tabulate and interpret data; Step 7) report results to the client; Step 8) Design the reaction and learning evaluation systems; Step 9) Design tracking systems: Behavioural, non-observable, and operational results; Step 10) Conduct training; Step 11) Collect, tabulate, and interpret evaluation and tracking data; Step 12) Report to the client.

Conclusion: There is no changes in the eight training components proposed. Even though this model suggests additional training components, these are already built into either one of the proposed training components.

Sork et al. (1986)

The authors conducted a descriptive and evaluative analysis of 51 training or programme planning models from 1950 to 1981. It is concluded that all models included in the analysis are composed of a number of steps which are either stated explicitly or implied by the organization of the literature.
Although the number of steps and the words used to label the steps vary from model to model, there are some commonalities among them. Sork and Buskey propose a generic planning model composed of nine specific steps synthesized from the literature, as follows: 1) Analysis of the planning context and client system(s) to be served; 2) Assessment of client system needs; 3) Development of objectives; 4) Selection and ordering of content; 5) Selection, design, and ordering of instructional processor; 6) Selection of instructional resources; 7) Formulation of budget and administrative plan; 8) Design of a plan for assuring participation; 9) Design of a plan for evaluating the programme.

Conclusion: This model’s training components agree with eight training components of the generic design. There is no additional component to be included. Element of system approach model to training is again being reinforced in this design.
Emerging Themes/Patterns of Designs

The most basic similarity in the models reviewed is that all of them have basic processes of training programmes in which the following components are present: (1) Needs Assessment; (2) Setting of objectives; (3) Conduct/Implement training; and (4) either an explicit or an implicit evaluation. There is a logical order of stages and steps in presentation and practice. This is the common order of training components agreed by all the authors, starting with the training needs assessment component and ending up with the evaluation component.

The most consistent similarity within the fifteen models is the pattern of emphasis. Most of the activities are concentrated on planning and designing phases which reflect the concern of the authors for careful design of the training programmes.

Also notable is the nearly total agreement among the authors. Most are specific about identifying training needs (exception: Gammage, Robinson et al.); most are clear in defining training objectives
exception: Friedman et al.; Goad; Murk et al.; Nadler; Robinson et al.; majority are organized in conducting training (exception: Friedman et al.) and almost all of them offer a fairly standard treatment of evaluation (exception: Friedman et al.).

It is also noted that, in this context, the building-up of the proposed generic training model is done alphabetically instead of chronologically. This was done so because each author in this review, developed his or their model based on its special features and concern at that time without any bearing on the time frame. It emphasized on the intent of the content of each model.

Summary of Generic Design

The discussion in this chapter deals with a training development construct that has generalizable aspects for training efforts undertaken by adult trainers. It expounds on an approach to generate a conceptual design in the model-building process (refer to Table 38, Appendix B). The basic eight components of the proposed design was derived. It is then
concluded that the training components of a proposed
generic systems approach design to training are: 1) Identify training needs, 2) Define training objectives,
3) Derive training content, 4) Derive criterion measures, 5) Design methods and training materials, 6) Conduct training, 7) Monitor and evaluate training, and 8) Follow-up and revise training (refer to figure 4).
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<thead>
<tr>
<th>Component</th>
<th>Model or Author</th>
<th>Identifying Training Needs</th>
<th>Defining Training Objectives</th>
<th>Designing Training Concurrent</th>
<th>Developing Concurrent Measures</th>
<th>Designing Materials and Training Materials</th>
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Figure 4: Matrix of Model by Component
Models for training

So far it has been argued that a number of factors have raised questions as to the validity of the traditional model of management training. These factors were described in the previous chapter and, as a result, some defining characteristics of best training practice were identified. In this chapter a number of models will be outlined and the ways they can underpin the delivery of best practice will be considered; in this way the requirements of a model which reflects the changed context will be developed.

A word of caution is necessary. Not all of the exemplars presented in this chapter were intended by those involved in their derivation to address the delivery of best training practice. Analysis of these models is valuable in so far as it highlights the additional features that need to be considered in defining a new, more comprehensive, model. The text below should therefore not be construed as a criticism of previous contributions to the literature; they could not fairly be criticized for not achieving what they did not set out to achieve.

THE SYSTEMATIC MODEL

Summary: The systematic training model has shaped the approach to training since the 1960s. Although of considerable value in introducing discipline it is at best a partial guide to what the training manager should do.

The most important, and pervasive, model for the rule of training in the organization can be labelled the systematic training model. A standard glossary of training terms defined systematic training as:

training undertaken on a planned basis as a result of applying a logical series of steps in practice, the number and description of these steps tends to vary, but in general terms they would cover such aspects as:

- Development of training policy
- Identification of training needs
A NEW ROLE FOR TRAINING

In the US, the approach has been derived from the work undertaken by the United States military on Instructional Systems Design. Characteristically such models have five stages: analysis of training needs, design of training curriculum, development of training curriculum, implementation (delivery), and evaluation. In the UK this model, and its many variations, received an immense stimulus with the creation of the Industrial Training Boards in the late 1960s; it accurately reflected the move towards increased concern for rationality and efficiency under the competitive pressures prevalent at that time. Definitive works were later produced by Boydell, who depicted ten steps of a cyclical process. Such models were simplified and restated in countless texts, most often in the simple diagrammatic form shown in Figure 2.1.

![Diagram of the systematic training model](image)

(National Standards for Training and Development © Crown Copyright 1992; reproduced by permission of the Training Development Institute)

**Fig. 2.1 The systematic training model**

A circular model is presented because it introduces a link from evaluation to the further identification of training needs. The process then becomes continuous. Indeed most refinements of the model involve feedback loops in some form. The IIPM's recommended text by Kenney and Reid gives the version of planned training reproduced in Figure 2.2. It can be seen that the Kenney and Reid version emphasizes the importance of considering the feedback from evaluation at all stages in the process.

Whatever the embellishments, the systematic model has two key characteristics. First, training can helpfully be perceived as a set of sequential steps; secondly, the identification of needs can be introduced into the training cycle at the appropriate stage. Essentially these are discovered through carrying out a thorough investigation of individual or group training requirements or by

![Diagram of Kenney and Reid's model](image)

(From Kenney and Reid 1992, Training Interventions by permission of the Institute of Personnel Management)

**Fig. 2.2 A model of planned training**

The systematic training model is useful so far as it goes: it does centre the trainer's attention on the need to act in a structured and disciplined way and, most importantly, stresses the place of effective evaluation of the training activity and the benefits that it can bring to other parts of the training cycle.

However, it cannot be regarded as, nor indeed does it purport to be, a structured attempt to deal with the issues involved in delivering best training practice. In particular, it does not suggest that the training function should take a proactive role in developing supply-led capability, nor does it consider the need to embed the modern training function in the organization and define its relationship with the other parties involved in the delivery of training.

THE TRANSITIONAL MODEL

**Summary:** A critique of the systematic training model has led to an interesting
The traditional model is comprehensively criticized in an article by Harry Taylor, in which he also gives a revised model which is intended to remedy one of its deficiencies; this revised model he styles the transitional model. His critique, which richly repays direct examination, is summarized below and his alternative is presented.

Taylor argues that the traditional systematic training model is firmly based in what he calls the strategic management paradigm: based on an examination of the environmental circumstances in terms of problems, threats or opportunities for the organization, top management sets the overall objectives which are then broken down into manageable functional objectives to be pursued by functional specialists working through their own sequence of stages. Thus the systematic training model is meant to be both a mirror of, and a contributor to, the general strategic management process.

He continues by arguing that three basic assumptions underlie the model: that training is seen as an investment in the organization, that a mechanism is required for allocating resources between competing investment opportunities, and that the appropriate mechanism is strategic planning; that there is a high degree of commonality between the interests of the organization and the needs of individuals who may or may not receive training. In fact, there is a considerable divergence between theory and practice. Decisions on training are not always consciously made, but evolve; successive published reports have collected only tentative links between training and organizational objectives.

Taylor then offers two critiques of the model. The first attempts to refute, repair and rehabilitate the model and bring it closer to reality. For example, the pitfalls of training in the organization can be raised, and evaluation techniques can be improved. The second, more radical, critique challenges all the underlying assumptions: training cannot be characterized as an investment, since an investment in human resources is quite different in character from other forms of investment; the strategic management paradigm is of limited application; in the training sphere there can be a singular divergence of interests between the organization and the individual.

Taylor argues that the model has been developed as a means of professionalizing training and thus attempts to establish its credibility. It has been put forward to explain and predict training activities and has been used by practising trainers as a route map. The overall assessment is that the systematic training model - despite its implicit emphasis on simplicity and its orientation to action - can no longer, on its own, be regarded as generally valid.

Taylor offers a new model which he labels the transitional model, shown in figure 2.3. This he describes as a double-loop corporate strategy and learning. The inner loop is the systematic training model; the outer loop is described as a "tailed strategy" and learning. Visions (the desired condition out there) are realizations (goals achieved).

**THE NATIONAL TRAINING AWARD MODEL**

Summary: The model that underpins the National Training Award carries confidence in the systematic training model to an extreme. As a result, it may fail to reflect the uncertainty that can govern training decisions.

The previous section concerned a reappraisal of the systematic training model which was tentative and exploratory in its approach. The next model to be considered is also a development of the systematic training model, but is far from tentative. This is the model of best practice that underpins government intervention in delivery of company training; a model that is more explicit in its...
Entrants to the National Training Award programme are told that the judges look for evidence that training contributed significantly to improved organisational performance. Additionally, entries are considered within a framework of features which demand the systematic marshalling of evidence and the effective evaluation of the training. The framework is presented diagrammatically and is reproduced here in Figure 2.4.

![Fig. 2.4 The National Training Award model](image)

The two-thirds of the framework on the right-hand side is the systematic training model in a simplistic form. The link between training and broader organisational strategy is expressed in a way that implies that the training system could be regarded as an isolated and independent sub-system of the organization; to quote from the accompanying National Training Awards guidance notes:

Business Need is what prompted the training initiative... Training Objectives describe what the individuals involved should be able to do, and to what standard, in order to meet the training need... Training Design is the plan of what is to be done to achieve the Training Objectives... Training Delivery is the implementation of the training plan... Training Outcomes are the measure to what the training actually achieved for the business and trainees, and decide how fully the Objectives were achieved...

Training outcomes could include less tangible consequences; the notes are also less rigid on organization benefits suggesting that while it is important that training outcomes lead to benefits, for the organisation – these may not necessarily address the original "problem" but may include some unforeseen, yet valuable, results. However, the whole approach reflects a confidence in the precision of the systematic training model, in particular a belief that:

- the requirements of organizational strategy should be translated into training objectives
- such a translation is feasible
- training should take place in a systematic and sequential fashion
- the results are capable of evaluation (quantifiable results are recommended).

Any criticism of the model must recognize that the National Training Awards are a valuable and laudable attempt to promote effective training throughout all organizations in many different sectors of the UK economy. These companies that have won National Training Awards can be fairly said to meet criteria that...

...JOBS FOR TRAINING

number of positive features to the model – it explicitly recognizes the need to link training objectives with the requirements of the organization; it does not assume that training activity is solely the preserve of training specialists.

However, the National Training Award model does not fully address or recognize some other facets of training practice. In particular:

- it explicitly denies a proactive role for training in the organization, whereby the training function assists in generating and articulating organization needs as well as reacting to them.
- by placing such a firm emphasis on quantifiable results it downgrades the importance of the other less quantifiable effects of training activity (for example, improved morale through team building which, though not the prime objective of the activity, is a clear, if intangible, benefit).
- by concentrating on monitoring performance against pre-specified objectives, which are handed down to the trainer, it limits creativity.

In short, the recommended model is a valiant effort to demonstrate to non-training or primitive training organizations what is involved in moving to a new stage of precision. However, it may fit uneasily with the aspirations of organizations which have a developed approach to training.

TRAINING AS CONSULTANCY

Summary: The consultancy model has attracted a number of advocates. It is important to distinguish between consultancy skills (which all human resource professionals need) and the consultancy model. The latter has limitations because, at the extreme, it could result in the isolation of the training function.

It is questionable whether the perspective on training in the organization considered next should be called a model. Certainly the authors of the works cited did not intend their ideas to be interpreted as a comprehensive attempt to deal with the question of best training practice. What they presented was an articulation and examination of a major trend in training in the organization; they recognized a need to offer guidance to practitioners in facing the important new challenges.

Perhaps the strongest case made for the consultancy approach is that presented by Saunders and Holdaway, who focused on the attractiveness of the consultancy route: 'Consultancy can mean more control over what you do and how and when and where you do it.' Although this comment was meant to apply mainly to self-employed consultants outside the organization, it was also applied to internal consultants.
organizational context and explores the links with other development activities. Secondly, it identifies a series of component activities which can be addressed and achieved separately, on the road to the ultimate state of continuous development.

A criticism of the Statement must be that its standards of achieving continuous development are absolute and lie outside the control of the training manager. For example, it states that:

- the impetus for continuous development must come from the Chief Executive and other members of the top management team
- investment in continuous development must be regarded by the top management team as being as important as investment in research, new product development or capital equipment.

The use of the word 'must' is frightening to most training managers, who know how difficult it can be to secure such commitment. The Statement is silent on what is required if such support is not forthcoming.

THE ASHRIDGE MODEL

Summary: Researchers at Ashridge Management College have developed a classification of training activity across three levels of sophistication. Although stronger on description than prescription, their work offers a useful ladder of progression for the training manager.

The model discussed below is drawn from a substantial research project undertaken in 1986 by the Ashridge Management Research Group and jointly sponsored by Ashridge Management College and the Foundation for Management Education. The researchers undertook a study of leading-edge companies in the UK and proceeded through a literature search and detailed interviews with a cross-section of managers. The results were published as Management for the Future.

An important section of the report concerned the role of training and development. Here it was suggested that such activity within an organization can be considered at three levels of sophistication:

- a fragmented approach
- a formalized approach
- a focused approach.

Because of the importance of the model to the arguments advanced in this book, these stages are summarized in Figure 2.5.

1. The Fragmented Approach
   - Training is not linked to organizational goals
   - Training is perceived as a luxury or a waste of time
   - Approach to training is non-systematic
   - Training is directed
   - Training is carried out by trainers
   - Training takes place in the Training Department
   - Emphasis on knowledge-based courses
   - The focus on training (a discontinuous process) rather than development (a continuous process).

2. The Formalized Approach
   - Training becomes linked to human resource (HR) needs
   - Training becomes systematic by linking it to an appraisal system
   - The emphasis is still on knowledge-based courses but the focus of the course broadens, with greater emphasis on skill-based courses
   - The link which is made between training and HR needs encourages organizations to adopt a more developmental approach
   - Training is carried out by trainers, but the range of skill demands placed on a trainer develops with the new breadth of courses offered
   - Line managers become involved in training and development through their role as appraisers.
   - Pre- and post-course activities attempt to facilitate the transfer of off-the-job learning
   - Training is carried out off-the-job, but through career development the value of on-the-job learning gains formal recognition
   - There is more concern to link a programme of training to individual needs.

3. The Focused Approach
   - Training and development and continuous learning by individuals is perceived as a necessity for organizational survival in a rapidly changing business environment
   - Training is regarded as a competitive weapon
   - Learning is linked to organizational strategy and to individual goals
   - The emphasis is on on-the-job development so that learning becomes a totally continuous activity
   - Specialist training courses are available across the knowledge/skill/value spectrum
   - Self-selection for training courses
   - Training is generally non-directive, unless knowledge-based
   - Few forms of training activity are utilized e.g. open and distance learning packages, self-development programmes, etc.
   - More concern to measure effectiveness of learning and development
   - Main responsibility for training rests with line management
   - Trainers adopt a wider role
   - New emphasis of learning as a process
   - Tolerance of some failure as part of the learning process.
The consultancy model offers a useful perspective on the skills required by the training professional. The consultancy relationship, however, is not an appropriate paradigm for the delivery of effective training within the organization.

CONTINUOUS DEVELOPMENT

Summary: The IPM has developed a valuable perspective on the role of training in the organization. This model can, however, be criticized for setting absolute standards and offering limited guidance on ways of making the transition from the current position.

The models of the training process reviewed so far have related to the means of delivering training at a particular moment. They have not been designed to offer a perspective on the continuing development of the training function. The next groups of models cover what is involved in enhancing the role of training over a period so that it may better serve the organization’s needs.

The first such model follows the Statement on Continuous Development promulgated by the IPM. The IPM has produced a set of recommendations for developing an organization which will encourage its workforce to achieve its capability. Only indirectly could it be regarded as a model of the training process.

Seven areas of activity are identified in the Statement. Attention to each of these areas is needed if learning in the organization is to take place and continuous development to be established. The areas are:

- policies, where a written statement is useful and any statement must go beyond good intentions
- responsibilities and roles, which are designated for senior executives, managers, personnel professionals, and all learners
- the identification of learning opportunities and needs, particularly through operational plans, job descriptions, and training needs analysis
- learner involvement, which should be achieved by encouragement and integration rather than compulsion
- the provision of learning resources, where the organization should clarify its policies and practices on issues ranging from budgets through to coaching resources
- benefits, which should be categorized and identified
- results, which are the characteristics that are displayed by a continuous development team.

Each of these areas is broken down into greater detail, and the IPM’s Statement is best regarded as a model of good practice. It is a statement of something that
A ROLE FOR TRAINING

Ride in return. Training is seen as a cost rather than an investment. The major report on training in the UK published in the mid-1980s, ‘Challenge to Complacency’, suggested that this was the view in most organizations.

As the sophistication of the delivery of training and development increases, organizations adopt a more formalized approach. Training and development become more structured and linked into organizational processes such as appraisal systems.

The Ashridge report suggests, however, that the full potential of training and development is released in those organizations adopting a focused approach. Training and development are then intrinsic to the organization and occur continuously. The emphasis moves from formal training to personal development, driven both by the goals of the organization and the needs of the individual. Line managers and individuals assume the main responsibility for development, while trainers adopt wider roles as advisers, facilitators and agents of change.

Organizations achieving this level of sophistication are described in the report as learning organizations – a term which is considered more fully below.

The Ashridge report is an important piece of research. It recognizes – unlike any of the other models previously discussed – that training is currently being delivered at a number of different levels of sophistication in the UK. It offers a clear ladder of progression through stages to the focused approach which it regards as the way of the future. The three-phase description is offered as a basis of a model of training and development against which organizations could plot progress.

The Ashridge model is stronger on description than prescription. It describes an ideal state for training and development in the organization and offers a useful set of indicators which could be used to measure progress. It does not, however, deal with the detailed mechanics involved in securing such progress. In particular, it does not offer directions for the training manager in an organization which is fundamentally unresponsive.

THE LEARNING ORGANIZATION

Summary: The creation of a ‘learning organization’ has emerged as an important objective for trainers. However, the term is often used imprecisely and needs critical examination if it is to be regarded as a practical model. Guidance on its implementation is now starting to appear.

One perspective on training that has attracted particular support in recent years has been the concept of the learning organization. The term has achieved a currency and prominence amongst the training and management development community.

Its rapid rise in popularity, the term ‘learning organization’ has been used in a variety of different ways – and on occasions imprecisely.

Much of the early impetus came from the American organizational psychologist Chris Argyris, whose work has centered on developing individual potential within the company. In a book written jointly with Donald Schon, he developed the concept of single- and double-loop organizational learning. The authors argued that organizational learning involves the detection of errors and their subsequent correction. If this detection and correction allow current policies and objectives to continue, the process is described as single-loop organizational learning. If, however, the detection and correction activities modify and change fundamental behavior, the organization can be said to have undergone double-loop learning; this necessarily involves learning from others, through discussion and a willingness to accept change. Organizations learn through the agency of individuals, and the appropriate climate must be encouraged to develop the synergy that can be gained through shared experience.

Argyris and Schon’s work is a contribution to our perception of learning; they wrote on organizational learning rather than the learning organization but in so doing helped to develop the latter concept. Another important contribution to learning theory which particularly influenced the development of the learning organization was the work of David Kolb, an American academic and consultant. Kolb introduced the concept of the learning cycle; at stage one a person starts off with an experience; stage two of the cycle is to observe and reflect on that experience; stage three is to develop certain principles and concepts from that reflection; stage four is to test these principles and concepts either by replicating the initial experience or by trying out the principles in new circumstances. This will produce a new experience (stage one again) and the cycle continues. Some advocates of the learning organization would suggest that the individual’s experience of the learning cycle can also be paralleled in the organization. In this case it is particularly important that the organization ensures that there is adequate opportunity for stages two and three of the cycle (respectively called ‘systematic reflection’ and ‘abstract conceptualization’) to take place.

A concept that loops from individual to corporate learning is central to the notion of the learning organization; it is a form of anthropomorphism, defined as the ascription of a human attribute to anything impersonal. This loop was accepted by Peters and Waterman in the early 1980s, who, in ‘In Search of Excellence’, wrote of the learning company as a truly adaptive organization evolving in a Darwinian fashion: the company is trying lots of things, experimenting, making the right sorts of mistakes; that is to say, it is fostering its own mutations. The adaptive corporation has learned quickly to kill off the dumb mutations and invest heavily in the ones that work.  
A NEW ROLE FOR TRAINING

If so, it adds little new to the training manager’s agenda and certainly does not deserve to be described as a new model of training management. However, a number of commentators have developed the underlying concept and placed it in a broader organizational context; when this is done the ‘learning organization’ can be regarded as a practical model.

An extension of the concept has found expression in the work of the American academic Peter Senge. His important work, The Fifth Discipline, has the subsidiary title The Art and Practice of the Learning Organization. It is conceptually difficult, and frequently misunderstood; the fifth discipline of the title does not, for example, refer to organizational learning but to the need for a systems approach.

Senge differentiates learning organizations from traditional authoritarian controlling organizations. The former are achieved by the mastery of certain disciplines, using the word in a broader sense; to Senge a discipline is a body of practice based in some underlying theory of the world. He argues that five new ‘component technologies’ or disciplines are gradually converging to innovate learning organizations. The five are:

- personal mastery, the capacity to clarify what is most important to the individual
- team learning, based on a dialogue in which assumptions are suspended so that a genuine thinking together occurs
- mental models, the capacity to reflect on internal pictures of the world to see how they shape actions
- shared vision, the ability to build a sense of commitment in a group based on what people would really like to create
- systems thinking, the capacity for putting things together and seeking holistic solutions.

Senge’s comments on team learning are of considerable value but his central message is that such activity must not be seen in isolation; it must be underpinned by the fifth discipline. Ironically, therefore, someone who is revered as a guru of the learning organization should more properly be treated as a major critic of the concept as advocated, since it is frequently viewed in isolation from other corporate activities. In a sense, therefore, the organization’s leadership must commit themselves to the total concept before Senge’s learning organization can be implemented. This makes an important theoretical construct but a demanding idea in practice.

organization is the focused approach to training and development at its most sophisticated. To quote from Management for the Future: ‘The learning organization may be defined as one in which learning is not restricted to discrete “chunks” of training activity, either fragmented or systematic, but is one where it has become a continuous process, and where on-the-job learning has become a way of life.’

Two members of the Ashridge faculty, Valerie Hammond and Edgar Wille, have extended this underlying concept in an important way. They argue that the learning organization becomes of value when, instead of developing in an arbitrary fashion, deliberate attempts are made to create conditions fundamental to its growth. This demands the development of proper frameworks so that systematic reflection takes place, and greater responsibility is given to the individual operating with a collegiate spirit. They offer the following elaboration of the concept:

The phrase ‘the learning organization’ is being used to describe the bringing together of people to achieve some objective, great or small, in conditions where they are all searching, all the time, for ways of doing whatever needs to be done in a better way. In learning organizations people are alert all the time for signals which show whether or not they are on the path to success in achieving their objectives. Learning organizations are continuously looking at the detail of their actions in the light of the whole, informed by a vision which they share with each other."

The use of the words ‘all the time and continuously’ offers a significant extension of the concept. They suggest that a learning organization is much more than a high-level training organization; it views learning as a central part of its day-to-day activity over and above what is needed for narrow business requirements.

With the exception of those commentators listed above, attempts to develop the learning concept as a coherent whole are few and far between. In general, there is acceptance amongst the training and development community that learning organizations are ‘good things’. The more valuable discussions on the learning organization are generally those which do not dwell on its philosophical aspects, but which offer practical advice on actions which should be taken to implement the concept. Two of these are described below.

Pedler, Burgoyne and Boydell offer a definition of the learning company (they prefer ‘company’ to ‘organization’ because the former is more convivial and less mechanical). Their definition is broad: ‘A Learning Company is an organization that facilitates the learning of all its members and continuously transforms itself.’ But their practical guidance and advice is specific and valuable. In particular they have identified eleven dimensions or features of a learning company which together form a blueprint for action. Their ‘jigsaw’ is reproduced in Figure 2.6.

Recent research aimed at developing a practical approach to becoming a learning organization has been coordinated by Parn Kandal, an Oxford-based prac-
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Courage, Glaxo, Marks & Spencer, National Westminster (Bank, Shell and the National Health Service Training Directorate). The consortium's aim is to produce some practical tools and instruments which will then be made generally available.

The Pearn Kandola approach sees the learning organization as a virtuous circle where values are linked to objectives, which are themselves linked to behaviours, subsequent actions and outcomes which reinforce the values. Their definition of the learning organization is not over prescriptive: they define a learning organization as one which places high value on individual and organizational learning as a prime asset. It is working towards full utilization of all individual and group potential for learning and adapting in the interests of meeting (and reviewing) organizational objectives. It does this in a way that also satisfies the needs and aspirations of the people involved. Inhibitions or blocks to learning are being identified and removed, and strong enhancers and structural support for sustained continuous learning are being put in place. A climate of continuous learning and improvement is being created.

Where the Pearn Kandola approach is particularly strong is in its development of a group of workshops, development programmes and modular exercises aimed at various levels in the organization and designed to work towards becoming a learning organization. Ten key actions are identified which facilitate the total learning organization - these are set out below:

- examine the concept at top management level
- analyse the state of learning in the organization
- devise an implementation plan
- examine the role of training and trainers
- equip managers to facilitate learning in others
- support learning
- upgrade the learning skills of all employees
- develop group and team learning
- promote open learning
- analyse jobs in terms of learning needs.

A specific tool kit using this method is now available through the Institute of Training and Development.**

A LEARNING ORGANIZATION IS ONE WHERE:

- the importance of individual learning to corporate development is recognized
- team learning is promoted through interaction and feedback,
- experimentation is encouraged and hence failure is tolerated
- there is an effort to devolve responsibility in a supportive environment in a way that allows
- the potential to develop further.

In general, however, the term 'learning organization' lacks precision. It certainly describes an organization which exhibits the characteristics set out in Figure 2.7. These are drawn from various commentaries, but they do not constitute a dramatic sea change in thinking about the place of training in the organization. The concept is of value when it is applied, and it needs to be applied in organizations where training is less well accepted. One can readily share the frustration felt by Peter Honey, a leading UK writer on learning theory, who offered a simple recipe for creating your own learning organization and concluded:

you cannot wait for Utopian conditions otherwise you'd wait forever. If top management are not sympathetic with the notion of the Learning Organisation that is unfortunate but not the end of the matter. Simply use the steps to create a mini-learning organisation in the parts you can influence. Small incremental changes, v. sustained, have the habit of gaining momentum to the point where they become transformational.***

This seems sound advice, but is a far cry from the total concept offered by Songe.

DEVELOPING A NEW MODEL

Summary: Whatever the limitations, deriving a training model is worthwhile. Drawing on the perspective given by the models considered earlier in this chapter, some characteristics of best practice are presented.

The analysis of the alternative models can now be brought together and some conclusions advanced. The implications of these conclusions are explored in the next two parts of this book. First, however, there is an important issue to be examined: do we need a training model at all? Two linked arguments can be advanced which suggest that the results from the effort needed to produce an effective model may not be worth the investment.

The first argument is pragmatic. Given the diverse nature of organizations in which trainers work, no model of general applicability can be derived. Training must be delivered in organizations of varying size, with centralized or decentralized structures, with different patterns of ownership and with different traditions. The Ashridge model, for example, distinguishes three separate phases of the training development. Can the same model sensibly be applied to organizations which are in different phases?

The second argument proceeds from an acceptance of these difficulties and suggests that to impose a model could be damaging to the achievement of objectives. To some extent this perspective is reflected in the consultancy model already considered. By operating as internal consultants, it is suggested, trainers will have the opportunity to enter into different contracts with appropriate line
The more authoritative features of the systematic training model have been retained: the importance of working within a framework is stressed. Although this view can only be supported in an anecdotal manner, few criticisms are more pertinent and more damaging to trainers than the implication that they are working without any clear strategy and to an agenda that is totally self-determined. The importance of the loop from evaluation is underlined, but it should be recognized that much of what the trainer does, and the organization regards as important, cannot readily be quantified—a topic that is discussed more fully in Chapter 7.

The outline in Figure 2.8 explicitly endorses the strategic role for the training responses to and acceptance of training initiatives: henceforth this will be described as the level of training culture within the organization. This follows from a consideration of the Ashridge model and the desire to move towards a learning organization (however defined). Finally, it can be seen that the relationships implied in the consultancy model have been rejected, even though the need for consultancy skills are accepted and will be redressed.

So far Figure 2.8 has been deliberately described as an outline for a new model of training practice—it is too imprecise to be described as a model. A more precise model is presented and discussed in Chapter 8. Since one of the central arguments of this book is that models should be determined by practical realities, further examination of these realities are needed before the model can be fully developed. The discussion so far has, however, given some useful indications as to how that examination should proceed.

Since value has been found in the systematic training model (see Figure 2.1), the underlying structure of that model is used as a framework for the examination. However, it is suggested that the activities of the training cycle must, to have maximum effectiveness, be conducted with the following objectives in mind:

- in almost all cases the training culture of the organization will need to be developed. In the UK organizations that overtrain will be rare. Line managers and human resource professionals will need to be made more aware of the importance of training and their role in its management. They will need to take up a learning curve
- the trainer should actively seek to develop the responsibility and responsiveness of line management
- the trainer will need to assist in the articulation of the strategic contribution that training can make, rather than relying on the organization to identify this for him or her.

Before examining the way in which training activity can be improved, on further piece of information will be introduced: how best practice companies are organizing training in the new context. This takes the form of a survey presented in Appendix to Part 1.
REFERENCES


A BLUEPRINT FOR TRAINING

Here's how a team of training "architects" applied the corporate-based process of quality function deployment to develop training modules for the continuing education of nurses.

Most architects want to know the needs, interests, and preferences of their clients before designing their homes. Site, time, and cost are also important factors. The architect draws the plans, the reaction of the client, and makes adjustments. Designing a training module is similar.

The training designers and end-users of the training should have input into the content, materials, and mode of presentation. All parties should be involved from the start. This is especially important in continuing education for medical practitioners. They need accurate, clearly presented information about new knowledge, technologies, regulations, and procedures.

Typically, in the continuing education of nurses, a nurse educator or an instructor updates staff members through lectures. But that can be costly and time consuming. The nurse educator has to take time away from work to prepare and present the material. And a lot of people need the training because almost all levels of nurses must meet requirements set by the Joint Commission on Accreditation of Healthcare Organizations. It can be difficult to find a competent person who is also available to teach. And, as studies have shown, the lecture-only approach hasn't proven especially effective in changing people's behaviors or increasing retention of learning.

This case study shows how a team of trainers, instructional designers, and medical experts developed training modules that nurse educators could use in their own medical facilities on their own schedules. The modules aim to teach new knowledge and skills and to help develop staff. The team included a subject matter expert, a videotape scriptwriter, audiovisual designers, evaluators, and a project director.

The team decided to adapt the process of quality function deployment to create the modules.

From corporate to educational. Typically, quality function deployment is used in corporate settings at each stage of product development. It's a team-oriented planning tool for translating customer requirements into operating standards. Developers spend a lot of time and effort on front-end analysis to determine what customers really want. Though this tends to increase the initial planning time, it decreases the overall cycle time in bringing a product to market.

In some ways, adapting QFD to design a training module is similar to designing a custom home. First, the training "architects" must decide who should give input, how to get it, and...
how to use it. They must decide who should conduct the training and which delivery formats are appropriate.

In the case of continuing education for nurses, the development team had to produce modules that would comply with regulations, protect patients, and change nurses' attitudes and behaviors. So, what did the trainers really need to know? How would facilitators use the modules?

The team identified the primary audience of customers as the nurse educators and nursing staff and the secondary customers as the medical facilities and accrediting organizations.

**A module of restraint**

The first module, "The Restraint-Free Environment: What Does It Really Mean?" was designed to comply with new restrictions on the use of patient restraints in clinical settings. The goal was to change nurses' attitudes about using patient restraints as a safety measure. The module included an experimental section on practicing alternative techniques.

Nurse educators and other clinicians representing 27 health-care facilities met with the development team to review the initial design of the module. Some attendees served as "learners," representing the intended audience of the training. The nurses who would either conduct the completed training themselves or arrange for training. The development team, nurse educators, clinicians, and learners viewed the module for content, format, time frame, and intended audience—staff nurses.

The development team's SME described the proposed lecture content, exercises, case studies, overhead transparencies, and handouts. All participants discussed the plans in an open forum. Then they completed an evaluation with pre- and post-training questions to determine whether their attitudes about restraints had changed since reviewing the proposed module.

The nurse educators in particular suggested that the completed module include a user-friendly manual—visuals such as a videotape, handouts, and overhead transparencies—material specific to their own facilities; and a section on alternative approaches to using restraints in non-emergent situations such as administering intravenous solutions. They also thought that two hours should be long enough for the module.

Next, the videotape scriptwriter prepared a draft for review by the development team and nurse educators. The main goal was to help nurses realize that a restraint-free environment is possible. The introduction reflected and affirmed most nurses' concerns about using fewer restraints. Then the script presented three typical situations: a disoriented patient pulling at an IV tube, a stroke patient who forgets to ask for help when getting out of a wheelchair, and a person with cognitive impairments who tends to wander.

**The goal was to change nurses' attitudes about using patient restraints as a safety measure.**

People's input was incorporated into the next design stage.

**Testing, testing, testing**

Now, the training module was ready to test to determine whether it needed further refinement.

Four large health-care facilities in the United States participated in the pilot test. They included an acute-care center in the Midwest; an acute-care center in the East; a facility in the South that provides acute care, geriatric care, and psychiatric care; and an acute-care and psychiatric facility in a large inner city.

The pilot sites received handouts, overhead transparencies, a videotape, and a draft of the instruction manual. The development team selected, interviewed, and instructed four nurse educators/facilitators and four monitors at each pilot site. The facilitators and monitors read the materials and prepared to present the module at their own sites. They studied the manual, recorded the amount of time they spent preparing, and made notes on their ideas for revisions.

During the actual presentations, the monitors served as silent observers. They were instructed not to evaluate the facilitators' skills but to determine whether the module's design, content, materials, and delivery format were sound.

The pilot tests took two months to complete. The monitors, facilitators, and participants suggested that the development team replace overhead transparencies with more interesting visuals to accompany the lecture. They also wanted facilitators to distribute all handouts in one package instead of individually. They unanimously approved the videotape.

Overall, the pilot-test evaluations showed that participants acquired new knowledge and experienced a change in attitude about using patient restraints.

Next, the icebreaker Circle of Knowledge was incorporated into the training design to introduce the concept to participants and foster a sense of community. The facilitator asks participants to complete the statement, "One thing I know about the Omnibus Budget Reconciliation Act (on restraints) is..." Or, participants can complete the statement, "One thing I would like to know about the law is..." The responses are recorded on flipcharts and used in the review and summary.

In the affective or attitude part of the training, it is necessary to have several armchairs with restraints in the classroom. First, the facilitator assures participants that everyone is concerned about patient safety. Then the facilitator says, "I'm afraid that some of you may fall out of your chairs. I think we need some protective restraints."

He or she asks several participants to apply wrist and vest restraints to other participants.

During the exercise, some people may object. The facilitator says, "It's for your safety—these restraints give patients who resist being restrained. Then participants are
released and asked how they feel.

The facilitator records their comments on flipcharts and refers to them during the lecture when discussing new regulations on patients' rights to be free. The goal is to acknowledge people's feelings of anger, humiliation, and panic about being restrained.

Overall, the training module emphasizes experiential or heuristic thinking in which participants use their own knowledge to solve problems. The videotape presents real-life situations in which restraints are used improperly. Then participants discuss alternatives to using the restraints. The module also includes alternative techniques.

All 27 facilities opted to use the first of the training modules and to receive further training via a low-cost, three-hour audio teleconference. The facilities received a revised manual, the videotape, visuals, and handouts.

The development team and the pilot-test facilitators, managers, and participants served as a facility for the teleconference. The module is now being considered for use in training nursing students.

Using quality function deployment in an educational setting proved to be effective and enlightening. More than anything else, it highlighted the need for thorough front-end analysis. In building houses, time spent in the design phase is time saved in redesign. And that's an important lesson for the architects of training in any environment.

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Effective Continuing Education for Professionals

expunge these values and preferences; rather, one should make them explicit so that everyone involved in the evaluation process is aware of their influence.

Evaluation processes must be part of the larger cycle of program development, just as program development is a form of professional practice. Evaluation problems, like program planning problems, are encountered in situations that are characterized by uniqueness, uncertainty, and value conflicts. By using the examples, images, and understandings from their repertoires, continuing educators can determine the evaluation problems to be solved as well as how to solve them.

CHAPTER 9

Being Effective in Continuing Professional Education

Throughout this book, an attempt has been made to identify the elements of effective practice in continuing professional education. These elements include the ethical dimensions of practice (Chapter Two), concepts of professionalism both as learners and participants (Chapters Three and Four), the institutional contexts of practice (Chapters Five and Six), and approaches to program development and evaluation (Chapters Seven and Eight). Although these elements may be separated for analytical purposes, they do not exist in isolation in the real world of practice. Continuing educators see professionals as learners and as participants as they develop and evaluate programs, which they do within an institutional context and a particular ethical framework. Because these elements operate simultaneously in most practice situations, they must be synthesized into a coherent whole to understand and to improve practice.

In this final chapter these various elements are synthesized into a unified picture of effective practice in continuing professional education. The purpose is to offer a comprehensive statement of what constitutes effective practice, thereby providing the criteria to evaluate and improve current efforts in continuing professional education. These criteria may be used to evaluate individual or collective activities of many continuing educators working with any of the professional groups identified in Chapter One.
The education authorities in many countries have realized the importance of continuing professional education for teachers. However, this practice is not widespread, and in many places, it is not acknowledged as an essential part of the education process. The purpose of this article is to explore the role of continuing education in improving the quality of teaching and learning. The studies reviewed in this article suggest that continuing education can be an effective strategy for enhancing the skills and knowledge of teachers. The article also highlights the need for policymakers to support the development of effective continuing education programs that are tailored to the specific needs of teachers and schools.
critical viewpoint in order to provide a comprehensive understanding of continuing education practice and the means to improve it. The critical viewpoint asserts that practice cannot be understood as the application of standardized principles to well-formed problems because most situations faced by continuing educators are characterized by uniqueness, uncertainty, or value conflict. Like other professionals, continuing educators must make choices about the nature of the problem to be solved as well as how to solve it. Because continuing educators are continually making choices, as opposed to simply applying principles, the critical viewpoint stresses the need to be aware of the range of choices open to educators and the ways in which these can be made. The critical viewpoint provides a framework within which to describe effective practice in continuing professional education. It offers a rich account of practice and one that can help continuing educators to improve their work.

Understanding Effective Practice

Continuing educators’ practice must be rooted in a coherent account of its ethical, contextual, and epistemological bases. All of these bases of practice are interconnected and are implicit in all forms of practice in which continuing educators engage. The next sections discuss each of the bases in more detail.

Ethical Basis of Practice. Because they seek to change individuals through their programs, continuing professional educators, like all educators, are engaged in a normative enterprise. Any attempt to change professionals is based on ideals of what they ought to be, to know, to do, or to feel. These ideals are rooted in continuing educators’ beliefs about the goodness or rightness of the new course of action. Herein lies the ethical nature of practice, for educators continually make choices, often implicitly, about the ideals toward which their activities are directed. Therefore, practice can be judged as effective only with respect to a particular ethical framework, and it can be judged as ineffective if it is inconsistent with the tenets of the framework by which it is being evaluated.

Being Effective in Continuing Professional Education

Many continuing professional educators act as if there is consensus about the proper ends of professional practice. As a result, there is rarely any discussion of the ethical dimensions of their practice. Continuing educators are often blinded to the ethical implications of their work by the homogeneous value orientations of the environments in which they work. They are often unaware that they make ethical choices in their practice because everyone who may be involved in a particular situation agrees with those choices. Stripped of this ethical understanding, continuing educators are limited to using a paraeducational language to describe their practice, using words such as needs assessment, performance objectives, collaboration, and teaching style. This provides at least a partial explanation for the current dominance of the functionalist understanding of professional practice.

In all professions there are differing, if not conflicting, ethical frameworks that guide the work of practitioners. Examples were provided in Chapter Two. In the same way, continuing educators’ practice is embedded in a variety of ethical frameworks. Every educative activity for which continuing educators have responsibility is a statement about the need for a particular form of technical knowledge, as well as a statement about the proper ends of professional practice. The ethical questions that are central to educative practice are: Why do professionals have this knowledge? To what ends will this knowledge be put? and What model of the learner should guide educational decisions? The most important decisions continuing educators must make in order to answer these questions are: Who should decide on the content of the activity? and On the basis of what criteria?

These ethical choices are not some abstract ideal, but are embedded in the very fabric of practice. Let us return to the continuing engineering education example in which the training director has asked the university continuing educator for a program on the newest techniques in designing nuclear power plants. By agreeing to deliver this program, the educator has made a series of ethical choices. For example, he believes that building power plants is a good thing and that the engineers need new knowledge to build them. He may not acknowledge
It is possible to develop and maintain effective communication skills in the field of professional education. Communication skills are essential for effective collaboration and the exchange of ideas, which is crucial in the educational process.

Effective Communication in Professional Education

The following are key principles for effective communication in professional education:

1. **Active Listening:** Pay attention to what is being said, ask questions, and provide feedback.
2. **Clarity:** Express ideas clearly and concisely to ensure understanding.
3. **Empathy:** Understand and respect the perspectives of others.
4. **Respect:** Treat all participants with respect and dignity.
5. **Feedback:** Provide constructive feedback to encourage improvement.
6. **Technology:** Utilize technology to enhance communication, such as video conferencing.

In conclusion, effective communication is vital in professional education. By applying these principles, educators can facilitate a more engaging and productive learning environment.
must be models of practice in the sense that they are taken from studies of actual practice. The guidelines will prove useless if they are models for continuing practice, in the sense of prescriptions of how educators ought to conduct themselves regardless of the specific context. If guidelines are to be used to judge practice, the criteria must be developed out of the actual situation being evaluated. Context is not an adjunct to understanding effective practice; rather, it is woven into the very fabric of practice.

**Epistemological Basis of Practice.** To fully explain effective practice, continuing educators must be able to describe how they do what they do. This description provides an understanding of the epistemological basis of their practice. The question that is central concern here is: "What kind of knowledge or knowing characterizes effective practice? Another way to say this is: What does one need to know to be an effective practitioner?" Schön (1983, 1987) has answered these questions by offering an epistemology of professional practice.

An epistemology (such as technical rationality) that can only offer an account of declarative knowledge possessed by continuing educators is inadequate as a tool for understanding the complexity of practice. The program planning frameworks described in Chapter Seven are examples of declarative knowledge about continuing professional education. This type of epistemology does not adequately describe the forms of knowledge that distinguish the excellent educator from the merely adequate, or in Benges's (1984) terms, the expert from the novice. For example, many expert continuing educators cannot describe any one of the planning frameworks from Chapter Seven, whereas many novices can describe them in great detail. A more appropriate epistemology is needed to connect continuing educators' plans, techniques, ideas, and knowledge to the real judgments made in the unique, uncertain, and changing contexts of practice.

Schön responds to this need by suggesting that two forms of knowing are central to effective practice: knowing-in-action and reflection-in-action. In contrast to the epistemology that views practice as the application of knowledge, Schön assumes that continuing educators' knowing is in their actions. Many of their spontaneous actions do not stem from a rule or plan they were conscious of before their action. That is, continuing educators constantly make judgments for which they cannot state a rule or theory. In many cases this knowing-in-action does not solve a particular problem because the situations faced by continuing educators are unique, uncertain, or marked by conflicting values. Therefore, they need to construct the situation to make it solvable. The ability to do this, to reflect-in-action, is the core of effective practice.

Returning to our example, how did the university-based continuing education program decide whether or not to conduct a needs assessment for the continuing engineering education program? If Schön's analysis is correct, the continuing educator would make the best judgment under the circumstances if he were highly skilled at reflecting-in-action. What would this process look like? The assumption is that this is an indeterminate situation because it is not immediately obvious that a needs assessment should be conducted. The continuing educator's goal is to change this situation into a determinate one, one in which he is relatively certain about the correct course of action. Based on past experience, the educator has built up a repertoire of examples and understandings of situations like this. This repertoire of practical knowledge is used to make sense of the current situation, to see it as some prior situation in which his actions were successful. Once the current situation is framed in such a way as to make it solvable, the educator would probably conduct an on-the-spot experiment to test its appropriateness. This might be done in conversations with others, such as the training director or the head of the continuing education unit, to determine their satisfaction with the potential course of action.

If effective practice is not to be utterly context-dependent, its epistemology must account for a kind of knowing that can be used in most or all situations. Reflection-in-action is such an epistemology. Its use is a key to understanding effective practice in continuing professional education. This epistemology describes how continuing educators make decisions in areas such as developing and evaluating educational activities, fostering participation in such activities, and forming interorganizational relationships. For instance, the entire program development
The acquisition of professional education appears to be less strenuous, with the exception of certain experiences and training in certain professions. This can be attributed to the nature of the profession itself and the methods of instruction employed. The acquisition of professional education is often considered to be more challenging, as it requires a deeper level of understanding and a greater degree of application.

In addition, professional education often involves practical experience, which can be obtained through internships, apprenticeships, or other forms of on-the-job training. This hands-on experience can be invaluable in preparing students for their future careers.

However, it is important to note that the acquisition of professional education is not solely dependent on the professional field. Other factors, such as personal motivation, environmental support, and access to resources, also play a significant role in the success of an individual in their chosen professional field.

In conclusion, while the acquisition of professional education may be less strenuous in some cases, it still requires a significant amount of effort and dedication. It is essential for individuals to be prepared for the challenges that come with professional education and to take advantage of the opportunities that are available to them.
continuing educators at the workplace, which unfortunately is often not fully tapped by others. Supervisors often have a wealth of uncovered practical knowledge among their staff that is not systematically made available to everyone. Finding ways to identify and share this knowledge would offer many ways to improve the practice of individual educators, as well as the collective work of a given continuing education unit.

Continuing professional education researchers also have a role to play in improving practice. Their theoretical formulations and empirical studies have an important role in improving practice. However, much more effort and resources need to be expended in these efforts in order to improve practice. More research and development units need to be developed, such as the one at Pennsylvania State University, where a collection of researchers focuses on a particular area of continuing professional education. This could be done by any one of the four principal providers of continuing professional education or through the collaborative effort of several providers. Some of their work should begin to focus on continuing educators' practical knowledge and the processes these practitioners use to make the best judgments, the effect of context on these judgments, and the ethical frameworks in which these judgments are made. Researchers can do this by examining their own practice as continuing educators or by working collaboratively with practitioners. Benner (1984), Elbaz (1983), and Schön (1983) have offered useful ways to conduct this type of research.

Much of this book has focused on ways for individual continuing professional educators to understand and improve their own practice. However, this book is based on the premise that continuing educators in all the professions are working on similar educational processes and issues. Although the responsibility for improving practice must rest ultimately with individual continuing educators, the achievement of this goal can be facilitated by individuals who see themselves as part of the collective enterprise of continuing professional education.
Assessing Training and Development Needs

This chapter describes the procedures that should be used to identify organization, group, and individual training and development needs. In many organizations, organizational development (OD) and training and development programs are conducted to meet the company's requirements. Obviously, organization and group needs are very important; they must be met if the organization is to prosper. But they represent only one side of the equation. Training and development programs must be conducted to meet the needs of individual employees, also. The consequences of failing to attend to these needs are far-reaching and can be disastrous for any enterprise—poor morale, low productivity, declining profits, and high turnover, with its associated high costs.

In addition, in too many firms and agencies, OD and training and development programs are operated to meet immediate requirements. Although current OD and individual training and development needs are important and must be met, the training manager must be equally concerned about the future training and development needs of both the organization and its employees. Unless this concern results in long-range OD and training and development plans based on regular, systematic, and objective needs assessment strategies, the training activity cannot make its expected contribution to the attainment of the goals and objectives of the enterprise it serves. For this reason, both immediate and long-range OD and individual employee training and development needs must be considered.

Upon completing this chapter, the reader will be able to perform as follows:

- **Behavior**: Identify immediate and long-range organization, group, and individual employee needs.
- **Conditions**: Given: procedures and forms for assessing needs and the authority to employ them.
- **Criterion**: In accordance with the procedures and standards described in the chapter.
Preliminary Considerations

Planning is the keystone of effective and efficient management. It is particularly crucial in training and development, because without careful and complete planning, resources are certain to be wasted. Without sound planning, training and development programs are not likely to support the plans and objectives of the enterprise as a whole. On the contrary, training and other aspects of enterprise operations are quite likely to be competitive. Training programs will evolve without any direct relationship to the needs of the enterprise. Often, they will take the form of emergency or stopgap actions. They will usually be more costly than anticipated. They may even produce products for which requirements have ceased to exist. In short, they will not be worth the investment.

Planning is a particularly important factor in designing effective development programs, which must be based on a searching look at the organization and on study of plans for its growth. Programs must reflect audits and inventories of employees that identify the managerial talent already on the payroll. They must be based on personnel needs forecasts that are regularly updated. And finally, they must be based on real staffing plans and must include specific procedures for obtaining the skilled personnel needed to meet projected job requirements. Without this kind of planning, no organization can realistically identify its manpower development needs.

Factors in Planning

Adequate planning for training involves consideration of many factors. Some of these can be controlled; others are beyond the control of management. However, both controllable and uncontrollable factors must receive attention. A discussion of some of the factors that have important implications for training and development programs follows.

Goals, Objectives, and Plans. It should be obvious that prevailing and projected economic conditions, both national and international, are important considerations in planning for the future operations of an enterprise. Analysis of economic trends and study of changes in the market for products and services are essential to the continued success of any enterprise.

Forecasts must be made of population growth, price levels, the political environment, business cycles, tax policies, labor turnover, efficiency of production, expansion of facilities, new markets, and new products. These forecasts are the basis for the formulation of enterprise goals, plans, and policies. Without such projections, no enterprise can hope to remain competitive.

If training and development programs are to make the contribution to the achievement of enterprise plans, goals, and objectives that they are expected to make, they must be derived from enterprise forecasts and plans. They must be geared to enterprise planning and human resource planning in terms of the projected expansion, reduction, or diversification of operations, production, and services. Planning for training must be integrated with other types of enterprise planning.

Scientific and Technological Change. Changes in enterprise operations, as well as in products and services, occur rapidly and continuously. Many of these changes are caused by scientific and technological advances. No enterprise can maintain its competitive status, let alone rise to a higher position in its industry, if it does not keep abreast of new developments, replace obsolete equipment, introduce new procedures and tech-
niques, and make use of all advances in the behavioral, social, and physical sciences as well as in the developing technology.

The impact of changes in science and technology on training and development programs should be evident. When new machinery is installed or new operating techniques are introduced, employees must be trained to use them. The effects of new developments on training are not limited to operative and supervisory employees. Managerial personnel are also affected. For example, the use of computers to provide information on which to base management decisions has created a need for management training to ensure that the full potential of such systems is realized. The relationships between scientific and technological change and employee training and development are, therefore, extremely close and vital. These changes must be reflected in training plans.

The Nature of Enterprise Operations. Although there are similarities in the training needs of all types of enterprises—whether public or private, production or marketing, sales or service—differences in individual companies dictate the establishment of tailor-made training and development programs. No enterprise is exactly like any other; therefore, training requirements differ markedly from enterprise to enterprise.

The types of products or services produced by an organization affect training programs. The training and development needs of a sales organization, for example, differ from those of a mass production industry. Another factor is the extent to which an industry has automated its production line and its materials-handling operations. The amount and kind of skills and the technical, safety, and supervisory training will vary accordingly. Therefore, regardless of essential similarities in operator and supervisor training and in management development programs, each enterprise must design systems that meet its own unique requirements. Transplanted programs are inevitably unsuccessful and wasteful.

The Composition of the Workforce. The age, sex, educational level, training, and experience of operative, supervisory, and managerial personnel, and their relative numbers, in part determine the types and levels of training required. In recent years the increased employment of high school, technical school, and college graduates has dictated changes in training programs. The presence of unions in enterprises has introduced another variable into planning for training. Some unions have their own apprenticeship programs, others cooperate with enterprises in operating training programs, and still others assume no responsibility for the training of their members. The stability and lack of mobility of the labor force in some areas create different training requirements from those in other locations where instability and mobility are characteristic. Both situations cause training problems, but they are different.

Enterprise Policies. Policies often have a strong impact on training and development programs. For example, if a company maintains a promote-from-within policy, appropriate and effective supervisory and management development programs must be installed and implemented to ensure a continuing and adequate supply of promotable personnel.

Top management's policy with respect to support for training and development is also critical. If training is to be successful, it must have the unqualified backing of top executives. The effectiveness of the training activity in performing its functions will be directly proportional to the willingness of top management to support it and to elevate it to a position of importance in the organization.
The Training and Development Staff. The number and types of training and development programs that can be operated depend in part on the available number of training personnel with the required managerial, professional, and technical skills, knowledge, and experience required to plan, design, and operate the needed training systems. Therefore, the scope and intensity of local training efforts depend on the availability of carefully selected and competent training managers and trainers. If such personnel are not available, alternative plans for conducting the required training must be devised, or plans for acquiring such personnel must be drawn up.

Facilities for Training. An important consideration in planning for training and development is the availability of adequate space, equipment, and other facilities for conducting training programs. Some types of training require a replication of the operational environment; some require standard classrooms; some require laboratory and shop space; and some require only conference rooms. If adequate space and facilities are not available, plans for their acquisition must be made or alternative means must be found to satisfy training requirements.

Costs. The most basic questions that top executives ask about the economics of establishing or continuing a training or development program are these: What will it cost? How can the cost be reduced?

Three types of costs—fixed, variable, and total—are customarily used to account for all expenditures related to conducting training programs. Fixed costs are those expended to obtain the personnel (permanent or roving), facilities, and equipment required to operate training programs. These costs are essentially constant and largely independent of the number, size, and duration of the programs offered. Variable costs are funds used to purchase instructional materials, supplies, transportation, and trainee housing. These costs are directly related to and dependent on the number, size, and duration of the programs. Total costs are simply the sum of fixed and variable costs.

The usual means by which management regulates the cost of a training program is by controlling variable costs. These costs are of considerable importance to trainers because they must be optimized. Trainers must assess the facts, compare the costs of alternative methods of providing required training, and use the results of such studies to make decisions.

Training costs are affected by both quantitative and qualitative training requirements. Quantitative training requirements are measurable in terms of the number of training programs operated and the number of trainees enrolled. The impact of these factors on costs is obvious. The cost implications of qualitative training requirements are less visible, but they are also present. For example, the desired level of proficiency of the products of a training system is an important factor to consider in selecting the instructional strategy to be used. Proximity level and instructional strategy influence the length of the training program, instructor-trainee ratios, equipment-trainee ratios, and required facilities. The length of the training program and the total number of trainees, together with instructor-trainee ratios, equipment-trainee ratios, and needed facilities, determine the number of instructors and the types and amounts of equipment and facilities needed. Because training costs vary with these requirements, it is crucial that qualitative as well as quantitative training requirements be accurately identified. Procedures for doing this are described in succeeding chapters.
Needs Assessment

A primary function of training and development is to provide the human resources development programs, services, and activities required to make the enterprise competitive in its industry and efficient and effective in carrying out its operations. To ensure that the right programs and services will be offered at the right time, several important activities must be planned and conducted by training and development. Foremost among these activities is needs assessment. And, as noted earlier, to be viable, needs assessments must take into account enterprise forecast of the environment in which the business will be operated in the future.

In addition, the plans of the enterprise, both intermediate and long-range, must be studied to determine what the organization will look like from the standpoint of size, organization structure, skills required, products, services, and processes. And action plans must be developed to ensure the systematic evolution of the new organization structure by developing position descriptions, applicant specifications, staffing objectives, organization development and renewal programs, career ladders, and training and development plans and programs.

Types of Needs Assessments

There are four different but complementary types of needs assessments currently in use in all types of enterprises. They are organization needs assessment, group needs assessment, individual employee needs assessment, and job needs assessment.

Organization Needs Assessment. Organization needs are macro needs. They are global. They include improving productivity, building morale, bettering competitive status, and the like. Organization needs are difficult to assess. They emerge from organization goals, objectives, and priorities. And they are met by some form of organization development.

In addition to identifying real organization needs (as contrasted with expressed wants), the results of organization needs assessment can be used to:

- Relate training needs to the goals and objectives of the organization.
- Link organization needs to individual employee training and development needs.
- Identify external forces affecting the organization, such as employee life styles and value systems, government regulations, and economic realities.
- Detect internal changes in communications, leadership style, power centers, and the like.
- Analyze the reasons for high turnover and grievance rates, labor-management confrontations, and reject rates.

Group Needs Assessment. Group needs are somewhat easier to identify than organization needs because they are more closely related to specific job levels or categories of employees. Analysis of group needs results in the identification of requirements for such interventions as team-building programs, role-clarification exercises, leadership training, small-group problem solving, creative problem solving, and action planning. Group needs also affect decisions about who gets trained for what and whether enterprise resources will be allocated for that training.
Groups can be homogeneous in terms of job functions (such as salespersons or supervisors) or heterogeneous (such as members of a construction crew composed of a supervisor, carpenters, plumbers, electricians, stonemasons, and roofers). The point is that all require the same type of training, for example, team training.

**Individual Employee Needs Assessment.** Individual needs are easier to identify than either organization or group needs. They are more specific and can be readily identified by analyzing the physical and mental characteristics, background, education, and training, experience, knowledge and skills, motivation, past performance, and career orientation of individual employees. Individual needs are needs that originate in the employee's current job, an evolving job (the job that today's job will become), possible future assignments, and career plans. These needs may be met by training and development programs of all types—from assertiveness training to stress-management training, from entry-level job training to advanced technical training, from supervisory training to executive development. In essence, individual employee needs are identified by determining what skills, knowledge, and attitudes an employee must develop to perform the duties and tasks of a current or future job in the organization.

**Job Needs Assessment.** Depending on the type of job, job needs can be either the easiest to define or the most difficult. For operational jobs involving observable motor skills, the process is relatively straightforward and simple. Occupational, job, and task analyses are performed to determine what the content of the training should be—in terms of required behaviors (what the employee must do), conditions of performance (what the employee is given to do the job, such as tools, and the environment surrounding the job performance), and the criterion of performance (the standard the employee must meet or how well the task or job must be performed).

For supervisory or managerial positions, the problem of describing the behavior, conditions, and criterion is much more complex: primarily because much of what goes on during job or task performance is not readily observable. The processes are cognitive or affective rather than manual or manipulative.

The analysis of job needs is addressed separately in Chapter 6.

**Methods of Needs Assessment**

Brinkerhoff has reported that in 1977 Daniel Stufflebeam of Western Michigan University at Kalamazoo, following review of dozens of examples of needs analyses, identified four different needs assessment methods:

1. **Discrepancy need.** The difference between "an ideal, normative, or expected level of performance and an actual level of performance."
2. **Demographic need.** A need "determined by majority rule...what most people prefer, select, or otherwise "vote for."
3. **Diagnostic need.** A need "defined through research and causal analysis."
4. **Analytic need.** A need "discovered by intuition, insight, expert consideration, or even alignment...that may "lead to new levels of performance."

The large number of needs assessment methods available to the training manager, assess
to the fact that needs assessment has received a great deal of theoretical attention, if not practical usage. Nonetheless, the basic problem the training manager faces is one of selecting the method that is most likely to provide valid and reliable data at a reasonable cost. A set of selection criteria will be presented later in this chapter. Here the methods from which the choice will be made are presented.

Advisory Committees. A common approach to needs analysis is the use of advisory committees. Committees representing all levels of management (first-line supervisors, middle managers, and executives), functional specialties (marketing, sales, management information, production, clerical support, and the like), or organizational levels (non-supervisory employees, technicians, supervisors, and staff personnel) are convened to identify, discuss, and set priorities for training needs. A variant of the method is to convene a panel of outside experts to perform the same function. In both cases, the committees provide recommendations; they do not make decisions.

Analysing Plans and Forecasts. Although there is little doubt that in most enterprises management is concerned with immediate problems and their solution, competent managers are equally concerned about the future. To be fully effective and make their contribution to the attainment of enterprise plans and programs, training and development managers must also be concerned with long-range planning. And unless that concern results in realistic training and development plans that support overall enterprise plans, the enterprise is likely to find itself with all kinds of skills shortages. The net result will be implementation of expedient solutions in terms of planning, often at a cost far in excess of the potential return.

Forecasts are projections of things to come. They attempt to look into the future. In effect, they are estimates of future happenings or conditions. Because training and development programs must be designed to support the goals and objectives of the enterprise and must be planned in light of future demographic, economic, political, and technological conditions, as well as in light of enterprise plans and programs and products that will be marketed five or more years later, the generation of training and development forecasts is far from simple.

What is required is a comprehensive survey of the training and development needs of the enterprise in light of enterprise forecasts and plans. Obviously, such an approach involves immediate expense for later long-term return. The possible consequences of omitting this approach, however, are so severe that omission is not a viable alternative.

Assessment Centers. Although primarily established to improve the objectivity, accuracy, and reliability of the employee selection and assignment processes, assessment centers can also be used to diagnose individual training and development needs.

Firstly, the process works like this. Employees are selected by their supervisors (or nominate themselves) to undergo assessment. Over a period of several days, and under the direction of a team of trained and qualified evaluators, participants deal with a variety of realistic problems and situations. They engage in simulations and games, in-basket exercises (see page 262), role playing, and decision-making exercises; undergo psychological tests and projective techniques; and engage in group discussions. Observers (evaluators) assess participants' behavior and performance, record their observations and impressions, discuss and evaluate individual performance, and combine their appraisals into a formal report. In addition to indicating weaknesses remediable by training.
Assessing Training and Development Needs

ing, evaluators make recommendations regarding promotability or fitness for specific positions and for further development. The results are shared with participants and their supervisors.

**Attitude Surveys.** In addition to fostering employee motivation and morale, improving upward communication, and demonstrating management's interest in the opinions, concerns, and ideas of employees, attitude surveys can provide insight into general areas of employee satisfaction and dissatisfaction. However, attitude surveys are particularly useful for reaching valid conclusions and training needs. Rather, they provide indicators of training needs. Survey items may consist of open-ended questions requiring narrative responses, structured questions with response choices identified, or both. To be most useful, clear and specific objectives must be established for the survey, and questions must be understandable to employees. An attitude survey should deal with issues of interest and concern to employees. Results must be systematically tabulated, analyzed, evaluated, and reported to top management, supervisors, the union, and employees.

**Climate Surveys.** Climate surveys are a variant of attitude surveys. They attempt to measure employees' attitudes toward factors considered important in establishing the climate of the organization. Perry and Robinson have devised an instrument to analyze each participant's answers to questions related to organizational climate—an instrument that yields scores for such factors as clarity of goals and standards, working relationships, personal development, management's credibility, degree of responsibility, and the like. They maintain that by administering the climate survey to managers and their subordinates, they can identify strengths and weaknesses, factors common to the organization, problem departments, and problem managers. The results can then be used to tailor training to specific needs and thereby improve its focus and relevance.

**Critical Incident Surveys.** A critical incident is an event or a situation that has a significant impact on an operation, function, or business result—or a potentially important consequence. The critical incident method requires participants to describe in some detail a specific situation or incident that "went wrong," identify the cause(s), and determine whether the situation could have been avoided and, if so, how. A sample critical incident survey is shown in Figure 5-1.

In addition to their climate survey, Perry and Robinson have developed a critical incident survey. They state that this survey enables them to "get inside the heads of participants" as the participants identify problems they have faced recently. After the survey is administered, responses are analyzed, tallied by problem type, and used in workshops, thus enabling an organization to tailor its training to the specific needs of participants and the organization's setting and problems.

**Group Discussions.** In this method a series of meetings of employees from a given occupational area in a specific function is conducted. The purpose of the meetings is to identify specific problems, analyze probable causes, and determine areas in which training can provide either the solution or a part of the solution to the problem. Although

2. Ibid.
3. Ibid.
Figure 5-1. Critical incident survey.

<table>
<thead>
<tr>
<th>Your Name</th>
<th>[Name]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your Title</td>
<td>[Title]</td>
</tr>
</tbody>
</table>

What went wrong?

One of the frustrating (or is it challenging?) aspects of being a manager is that,
from time to time, you are faced with a problem or situation where it is im-
possible to have a "happy ending," or successful outcome. These situations
 typically involve others: peers, a subordinate, a customer, a supplier, or
perhaps a fellow member of management (peer or boss), within or between
departments.

Think back over the past month or so and recall a specific situation at work
that "went wrong" for you. Review the incident in your mind. Then describe
it beginning with the space below and continuing on the reverse side, giving
enough detail so that one hearing it for the first time can visualize the nature
and scope of what you faced.

The "case history" that you are writing as you complete this form will con-
tribute to the relevance of our training program. With this in mind you may
want to change or disguise the names of any persons mentioned.

To help you structure your "case," we suggest that you answer these three
questions in the order listed. As you do so, put a number in front of the parts
of your story to "tie" them to our questions.

1. What was the problem or situation?
2. What actions caused or contributed to the situation?
3. Could the incident have been avoided? How?

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rights reserved. (This figure appeared in the article by Perry and Robinson cited in footnote 2 of this
chapter.)

This approach has the advantage of gaining commitment to any resulting training because
of the active participation of those concerned, it is not as reliable as other methods. It
is probably most applicable for preliminary needs analysis or where more rigorous an-
alitical approaches are not feasible.

Employee Interviews. Employee interviews, when conducted by other than the
employee's immediate supervisor as part of an ongoing performance appraisal and/or
counseling program are valuable but time-consuming. They are typically used
by trainers to obtain employees' perceptions of work problems and to identify areas and
skills for which employees believe they need training. Usually structured, these inter-
views are conducted by trainers/interviewers who make written notes of the interview-
ess' responses. Interviews have the advantage of high employee involvement.
Assessing Training and Development Needs

Exit Interviews. These are interviews conducted by trainers upon the termination (resignation, dismissal, or retirement) of employees. Again, they are typically structured, and written notes are made of responses. Although exit interviews have the potential for gathering valid information pertaining to training needs and problem areas (including problem supervisors), they have some serious shortcomings. First, interviews may not be cooperative (and may even be belligerent and misleading). The re- search and subsequent data are often not specifically oriented towards training needs. The mental does not permit the direct involvement of employees to be tracked or their supervisors. And the small number of cases (unless the organization is large, one that endures considerable turnover) extends data collection over several months or years.

Job Description and Applicant Specification Analysis. Job descriptions and applicant specifications identify the skills, knowledge, training, and experiences required for success in particular jobs in the enterprise. By analyzing documents used in screening and selecting applicants for jobs (application forms, personal history statements, resumes, reports of employment interviews, candidate evaluation forms, and test results) and comparing them with personnel records, discrepancies between job requirements and the knowledge and skills of job incumbents can be identified.

Management Requests. Management requests are simply solicited or unsolicited suggestions for conducting specific training and development programs received from line or higher-level managers. Although requests are typically well intentioned and are often insightful, they are highly subjective and may not reflect valid training requirements. True, the approach is inexpensive and does not involve a significant amount of time, but it suffers from a total lack of employee involvement and a lack of objective consideration of all factors bearing on the problem. Such requests require verification by other means before they are honored.

Needs Inventories. The needs inventory approach involves the development, administration, tabulation, and analysis of an instrument that describes the skills and abilities of a specific group or class of workers (for example, clerks, secretaries, computer programmers, supervisors, managers) and requires these employees and their immediate supervisors to rate independently the extent to which the skills and abilities apply to themselves or their subordinates. The ratings are tallied by item. The distribution of scores yields a rank order, reflecting the relative importance of specific skills. Decisions can then be based on a cut score; that is, training may be planned and provided for all skills scoring above a selected score. A sample needs inventory, developed by Parny and Robinson,1 is shown in Figure 5-2.

Nominal Group Technique. The nominal group technique involves a structured group meeting conducted by a group leader. The purpose of the meeting is to develop a list of problems that can then be addressed by other means. Scott and Debrah describe the process as follows:2 A local question is framed and a group of five to nine individuals is convened to consider it. Seated around a table, the individuals each write down as many answers to the question as possible. Then each participant, in round-

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1. Ibid., p. 12.
Figure 5-2. Needs inventory.

Listed below are statements describing the needs of supervisors and/or managers. In the box preceding each, place the number 1, 2, or 3, to indicate the degree to which it applies to you (or your subordinate if you've been asked to evaluate a subordinate's needs). Extremely important = 3, Important = 2, Not too relevant = 1.

| Ability to set realistic goals and standards, define performance requirements, and develop action plans for achieving and for controlling (measuring) performance. |
| Ability to communicate effectively in written and oral communications with peers, superiors, subordinates, etc. |
| Ability to conduct substantive interviews in a way that elicits the information needed to make sound hiring decisions consistent with company policy and the law. |
| Skill in balancing daily activities between the demands of the task (production-oriented) and the employee (people-oriented) needs. |
| Ability to challenge and motivate subordinates thereby increasing their job satisfaction and developing a sense of “ownership” among employees. |
| Ability to appreciate performance objectively and to conduct regular, constructive performance reviews that are sincere and believable. |
| Volatility in the people, plans, and goals that are essential to major organizational outcomes (personnel, product, market, and strategic directions, etc.). |
| Skill in writing letters, memos, and reports that are clear, concise, complete, and compelling...writing that gets action. |
| Ability to manage time (self and others) effectively by prioritizing, controlling interruptions, increasing efficiency, decreasing wasted time, etc. |
| Skill in cutting costs through methods of improvement, work simplification or reallocation, new chartering, analysis of procedures, etc. |
| Ability to lead meetings, briefings, conferences that are well-organized, clear, and results-oriented. |
| Skill in negotiating and resolving conflict at all levels in interpersonal situations. |
| Facility in diagnosing in depth, drawing out what is not said, summarizing and clarifying, and organizing the speaker’s message so that it can be acted upon. |
| Ability to identify problems, to separate causes from symptoms, to restate evidence, to weigh alternatives, and to select and implement appropriate solutions. |
| Skill in applying management by objectives at the departmental level (preparing action plans, performance documents, etc.). |
| Ability to make effective presentations and to sell ideas on a persuasive, well-documented, management level to subordinates, to customers, etc. |

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Table fashion, presents one idea from his or her listing. Each item is assigned a sequential number, and the leader writes the items on a flip chart. No discussion is allowed—other than to clarify the ideas presented. However, brainstorming (suggesting related ideas or answers) is encouraged. Evaluation of ideas is strongly discouraged.

Next, structured discussion of each recorded item or idea is conducted in sequence. The leader asks for clarification or expression of support or nonsupport for each idea and encourages full participation. The group thus earns its individual, independent,
Assessing Training and Development Needs

private, and silent balloting—participants select items and establish priorities by rank order or by rating listed ideas. Individual votes are pooled and tallied and represent the group’s priorities or decisions. According to Scott and Deshink, the nominal group technique “may represent the most effective training needs assessment method in many situations.”

Modified Nominal Group Techniques. Gerstene, Martinko, and Belina have developed a modified nominal group technique (MNGT), a description of which follows:

Phase I. Nominal Grouping. Natural work groups consisting of 5 to 15 employees at the same organization level and sharing the same duties and responsibilities are identified. Meetings of the natural groups are convened to identify problems in the organization that inhibit efficiency. The purpose of the meeting is explained, and employees are asked to make a written list of all problems they perceive in their own work area and in the plant in general. Problems are then read one by one from each employee’s list and are written on a chalkboard. The problems are discussed briefly to ensure understanding by all. Employees are thanked for their input and are informed that the methods and procedures for resolving the issues will be developed at a separate meeting. Data are summarized and collated according to natural groupings in the organization.

Phase II. Rating. Natural groups representing the work areas where problems existed are formed and are given a list of all the problems for their area. They are asked to rate the importance, priority, and safety of each problem on a 10-point scale. The groups are also asked to determine whether a problem was caused by a performance or a knowledge deficit. The data are collated and tabulated for each area of the organization and an average score is calculated for each category. Mean scores in rating categories for importance, priority, and safety are summed to determine the most critical problem areas.

Phase III. Action Planning. Natural work groups are again formed and convened. At this meeting, the responsible manager arrays all high-priority items for each group and indicates the actions he or she will take to resolve the problems. The natural groups analyze the remaining problems. Task forces are established (some spanning natural work groups) to study specific problems and return at a specified later date with action plans.

Observations of Behavior. Behavior observation involves a trainer’s or line manager’s direct observation of employees’ performance of either actual job tasks or simulated exercises. The purpose is to identify performance deficiencies that can be corrected by training. A variant of this technique involves the use of taped situations. For example, to assess the employment interviewing skills of managers, an individual masquerades as a job applicant, applies for a position in several departments, and evaluates the interviewing skills of the managers of those departments.

Typically, this technique focuses on job skills as contrasted with job knowledge and attitudes. Although the technique has value, it is time-consuming and costly. It is a passive method of data collection from the standpoints of employees and their supervi-

sort. And it may result in resentment due to the "test" atmosphere or the deception involved in the staged situation.

Outside Surveys. In special cases, it may be desirable to go outside the organization to get insights into the training and development needs of employees. For example, to identify competencies in job performance by salespeople, customer relations specialists, or purchasing personnel, questionnaires surveys or interviews with customers, suppliers, and dealers can be used to elicit the information needed.

Outside surveys have also been used to identify the skills and knowledge most needed by managers in various types of businesses. For example, Thomas and Sireno conducted such a study. A list of 350 activities was generated by means of review of the literature and suggestions from employers. The list was submitted to a panel of consultants for a check of content validity, which resulted in a reduction to 115 activities. These were included in a questionnaire and sent to a random sample of firms in various industries. Responses were combined into the functional areas of communication, leadership, and control. Weighted index values were computed by allocating points to activities considered essential (4 points) or important (3 points). A composite index was calculated to show the relative importance of the competencies within the industry.

Performance Appraisals. Most enterprises have instituted performance rating systems as a means of ensuring the attainment of minimum standards of performance and as a basis for rewards for job performance that exceeds the established minimum standards. Information gained from analysis of performance appraisals can provide a dependable basis for needs analysis. Performance appraisals invariably include notes pertaining to the developmental and training needs of employees as well as observations or ratings regarding performance of job duties and tasks. Good systems identify discrepancies between current performance and the required or desired level of performance.

Performance Documents and Records. Review and analysis of existing enterprise reports, records, and other documents that reveal the level of performance of critical functions and tasks are yet another useful basis for performing needs analysis. Records of absenteeism, accidents, break time for newly hired employees, customer complaints, employee errors, employee suggestions, grievances, labor disputes, lost time, machine downtime, machine damage, misinterpretations of company policy, morale studies, number of promotable employees, projections of position vacancies, operating costs, production bottlenecks, rejections and rework, overtime, sick leave, tardiness, time required to introduce new products or processes, return on investment, quality control, sales records, training audits, unit costs, violations of company rules and regulations, waste and spoilage of materials, and work backlogs are all useful in identifying training and development needs. The data in these documents are usually quantified, and collecting them involves no additional or incremental costs since they were established to serve a different purpose.

Product Evaluation. Product evaluation involves collecting, examining, and evaluating products produced by managers, supervisors, technicians, or other categories of employees, using a set of quality standards developed for that product. For example, to

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Evaluate the proficiency of managers in report writing, a representative sample of reports could be retrieved from existing files and evaluated against criteria established for enterprise reports. Similarly, to evaluate a secretary's ability to prepare replies to routine correspondence, copies of such correspondence could be taken from files and evaluated.

Questionnaires. A common means of collecting data on training and development needs is the construction and administration of a questionnaire to all employees or to selected categories of employees. Most questionnaires list a number of employee skills or behaviors and ask respondents to rate themselves on a 1-5, or 1-10-point scale. Other forms ask the employee to rate the importance of the behaviors and how well he or she currently performs them. Still other forms (sometimes companion forms) are completed by supervisors for each of their subordinates.

Skills Tests. Skills or proficiency tests can be developed and administered to yield data pertaining to training and development needs at all employee levels and for all types of positions. In addition to identifying skills inadequacies, including higher-level cognitive skills such as decision making, tests can also reveal deficiencies in job knowledge. The use of skills tests also permits the elimination or avoidance of unnecessary training—training in skills previously learned. Although such tests can be very accurate and can provide a firm basis for training decisions, the costs of developing skills tests may be prohibitive.

Selecting a Needs Assessment Method

With such a large number of options available, how should the training manager decide which needs analysis method (or methods) to use? If more than one method is to be used, how does the training manager justify the investment of resources?

Criteria for Needs Analysis. Unquestionably, the soundest basis for selecting a needs analysis methodology is a set of selection criteria. Because the criticality of some criteria will vary from organization to organization, the training manager should develop a tailored set of criteria. Two sets of criteria are offered for consideration here. A composite of the two sets may provide a useful and reliable set of criteria.

Geppon, Morin, and Beima have developed the following needs analysis diagnostic criteria:

- Participation. All members and levels of the organization are involved.
- Inexpensive. Does not use expensive surveys, testing techniques, or consulting services.
- Efficient. Can be conducted on company time but does not require more than 2 to 3 hours per employee.
- Ownership. Procedure is designed so that each employee feels that problems identified relate to their input and key concerns.
- Conceptual clarity. To establish ownership and feelings of real participation, the procedure must be easily understood by all employees and managers involved.
- Problem differentiation. The procedure must differentiate among problems—place them in classifications indicative of their origin and possible solutions.
• Affective states. The procedure must result in a "reading" on how the employees feel about the organization and its problems.

Newstrom and Liljquist have developed a somewhat different set of criteria for differentiating among needs assessment methods:

• Employee involvement. Employees have a legitimate need to know and a desire to know why they have been selected for training.
• Management involvement. If supervisors have been involved in the needs analysis process, they are less likely to support the training program by encouraging attendance and providing an opportunity to apply the new knowledge.
• Time required. One critical dimension in needs assessment is the total time frame allotted to the process of data collection and analysis before a final report on high priority needs is due. Another dimension is simply the proportion of the trainer’s work day that can be productively devoted to needs analysis. A final factor is the amount of time required of the trainees, who can ill afford to be away from their jobs for extended periods of time. Consequently, consideration of the time dimension will generally encourage trainers to select needs assessment methods that are brief and immediate, rather than those that are extended or require a large investment.
• Cost. The element of cost should not be considered simplistically, but should be examined in the light of both the costs and benefits produced from the method used. Realistically, training budgets often preclude the use of "better" methods simply because resources are sharply limited. Therefore, low-cost methods are generally chosen.
• Relevance and quantifiability. Corporate executives are predictably concerned about the rationality of training expenditures. Emotional pleas supported by subjective assessments of training needs will fail to convince most managers that critical training needs truly exist. Additionally, the technical (engineering), quantitative (financial), and logical reasoning (legal) backgrounds of many corporate executives lead them to be highly oriented toward objective data as a basis for their decisions. Therefore, to the degree that information can be gathered that is directly relevant and quantifiable, these managers will likely be more receptive to the conclusions drawn from objective sources.

Contingency Model. Newstrom and Liljquist advise trainers to thoroughly investigate the advantages and disadvantages of available assessment methods in relation to:

Assessing Training and Development Needs

the selection criteria of greatest importance to them. They have developed a contingency model to provide general guidance in making these decisions (Figure 5-1).

Verifying Training Needs. Most methods of needs assessment lack precision. Some methods yield only general indicators of training needs. To improve the reliability of training needs assessments and to reduce the risks of making poor decisions, the use of two complementary assessment methods is strongly recommended.

According to Louis Olivas:

The proper needs analysis and/or combination of data-gathering services should be utilized. The utilization of more than one process can assist in supporting findings, indicating reliability and/or indicating some training needs not found but needing further substantiating before directed training designs are accomplished. . . . Training personnel must and should continue, at minimum yearly, to conduct training needs analysis utilizing more than one technique. Conducted properly, the various processes utilized can verify and reinforce the training activity as well as management the accurate needs.11

Conducting the Assessment

Where do you begin? What do you look for? Where do you go next? Do you interview? Send out surveys? Observe? How do you know when you are finished?

Up to this point, the needs analysis has reviewed the situation, identified and evaluated alternative assessment methods, and selected the two most appropriate and cost-effective approaches. The needs assessment can now be undertaken. This phase consists of four important steps: collecting the data, tabulating and organizing the data, analyzing the data, and reporting the data.

Collecting the Data. Although decisions regarding the target groups and sample size were probably considered during the needs assessment selection process, final decisions must be made on these issues as well as on such items as the means of maximizing participation or responses and of ensuring the collection of accurate data.

Participants/Respondents. Two major questions must be answered with respect to the target group(s) for the assessment: Are they to consist of in-house personnel or people from outside the organization? And what specific groups are to be involved? For in-house target groups, the alternatives include clerical personnel, skilled employees and technicians, first-line supervisors, scientists and engineers, staff personnel, middle managers, and executives. For outside target groups, the options include suppliers, customers, clients, employees of comparable organizations, and experts of one kind or another. Another important question relates to coverage. Are all employees in all departments and at all occupational levels to be involved in the assessment or only a representative sample? Or are only certain departments, job categories, or occupational levels to be selected?


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Figure 5-3. Contingency model of needs assessment methods.

<table>
<thead>
<tr>
<th>Methods</th>
<th>Incumbent involvement</th>
<th>Management involvement</th>
<th>Time requirement</th>
<th>Cost</th>
<th>Relevant quantifiable data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advisory committees</td>
<td>Low</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Assessment centers (external)</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Astute surveys</td>
<td>Moderate</td>
<td>Low</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Group discussions</td>
<td>High</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Employee interviews</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>(by trainer)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Exit interviews</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>(by personnel dept.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management requests</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Observations of behavior</td>
<td>Moderate</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>(by trainer)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance appraisals</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Performance documents</td>
<td>Low</td>
<td>Moderate</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Questionnaire surveys and inventories</td>
<td>High</td>
<td>High</td>
<td>Moderate</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>Skills tests</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

From John W. Dessinger and John H. Behnke, "Selecting Needs Analysis Methods," *Training and Development Journal*, American Society for Training and Development. Used by permission. All rights reserved.
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Sample Size. If a sample, rather than all employees or all employees of a certain department or job category, is to be used, the next decision relates to the size of the sample. This decision must be based on full consideration of the assessment method to be used, the requirements of the statistical analysis treatment to be applied, and the constraints placed on the assessor by the organization. In any event, the advice of a statistician should be sought.

Maximizing Return. Another important step in data collection is the selection and use of techniques designed to maximize the return rate for assessments involving surveys and questionnaires. The following techniques have proved effective in eliciting a high rate of return:

- Announcement of the assessment, its purpose, and its importance by top management well in advance of the project
- Notices placed on bulletin boards and in company newspapers or other publications
- Enlistment of union support for the project
- Memos or letters to individual participants, stating the purpose and importance of the project and noting the date, time, and place of the assessment activity
- Follow-up phone calls or memos to no-shows or to people who fail to return the survey or questionnaire by the date requested

Obtaining Accurate Information. Obviously, the collection of accurate information is critical to successful assessment. The following techniques will improve the accuracy of assessment data:

- Using simple, clear, and easily understood sentence structure and vocabulary
- Emphasizing the confidentiality of information provided by respondents
- Pretesting the questionnaire or survey instrument
- Using structured interviews
- Using fully trained administrators/interviewers

Tabulating and Organizing the Data. The problems of tabulating and organizing assessment data are many, whether the tabulating is done manually or by computer. Quantitative data are, of course, much easier to tabulate and organize than qualitative data. Essentially, the process involves the establishment of categories for the information collected, placing these headings on tally sheets, and then reviewing each respondent's answers to the questions posed by the survey or interview, or entering observations, test scores, or the like. If a computer is used, the process involves coding the data and entering them either by card, tape, or keyboard (of course, with the appropriate instructions for tabulating the data).

Needs Analysis Software and Tools. Powerful new software designed to automate a portion of the training needs analysis process is now commercially available.

One such program is called TE for Training Evaluator. With it, the user can develop and administer training surveys that can be taken on a PC or in paper format. (The program runs on IBM AT, XT, PS/2, and compatible computers and requires 312 RAM and a hard disk; see Appendix B.)

Many off-the-shelf assessment tools and exercises are also available. Among these are some 20 assessments produced and distributed by Training House. They include...
Designing Training and Development Systems

Assessments of managers' training needs, managers' values and styles, communicators' styles, dealing with groups, writing skills, leadership and team building, and communication audit.

Other sources are Talico Inc. and the American Society for Training and Development (ASTD). Talico provides self-scoring, multilevel assessment tools for management training, training needs, communication effectiveness, leadership effectiveness, management skills, and supervisory skills and also provides team-building instruments. ASTD's Trainer's Toolkit contains several needs assessment instruments. (See Appendix B for addresses of sources.)

Analysing the Data. Data analysis is undoubtedly the most difficult and, at the same time, the most critical phase of needs assessment. It is here that the professional knowledge, skills, and experience of the assessor are brought to bear. It is the assessor's job to study the data, interpret them, evaluate findings, and formulate recommendations to remedy problems and shortfalls.

One of the most important requirements of the analysis phase is to differentiate between learning needs (knowledge or skills deficiencies) and nonlearning needs (performance, equipment, attitude, or morale deficiencies). The reason for this is that the choice of action plans depends on the type of deficiency to be addressed. It makes little sense to adopt a remedial learning strategy to solve an equipment problem.

Reporting the Data. Another critical part of the needs assessment process is the reporting phase, which has three major aspects—determining what data are to be reported, how the data should be reported, and who should receive the reports. Feedback to participants in the assessment as well as to management is valuable from at least three standpoints: (1) both participants and management expect to receive findings from the project; (2) feedback helps validate the findings (if participants agree with or support the findings, action planning can proceed; if they do not, data can be subjected to further analysis or the study can be repeated); and (3) feedback enables the assessor to determine whether the organization is ready to implement the recommendations.

Report Coverage. All data should be reported so long as the confidentiality of individuals is protected. No valid purpose is served by withholding findings from either participants or management.

Types of Reports. Reports can be quantitative, qualitative, summary, or all three. A quantitative report provides numbers—ratios, percentages, or other normative comparisons. Examples are computer printouts, factor analysis of questionnaires, item-item analyses, extent of agreement or degrees of importance of scaled items, scores, ratings, and charts or graphs. Qualitative reports are narrative descriptions of what was observed or collected. Examples include summaries of behavior observed, compilations of information received from open-ended questions (interviews or questionnaires), and lists of recommendations. Summary reports simply list training and development requirements by category for a specified time frame. A sample summary report is shown in Figure 3-4.

When reviewing reports, the following caveats apply:

- Numerical reports require clarification and explanation in order to avoid misinterpretation.
Figure 5-4. Training and development needs, 19__ to 19__

<table>
<thead>
<tr>
<th>Types of training and development</th>
<th>19__</th>
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<th>19__</th>
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<tbody>
<tr>
<td>Orientation</td>
<td>IP</td>
<td>OP</td>
<td>IP</td>
<td>OP</td>
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<tr>
<td>Operative employees</td>
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<tr>
<td>Supervisory employees</td>
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<tr>
<td>Managers</td>
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<tr>
<td>Safety</td>
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<tr>
<td>Operative employees</td>
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<tr>
<td>Supervisory employees</td>
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<tr>
<td>Managers</td>
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<tr>
<td>Technical training (list specific programs)</td>
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<td></td>
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<tr>
<td>Other training (list specific programs)</td>
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<tr>
<td>Supervisory development (identify specific jobs)</td>
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<tr>
<td>Middle-management development (identify specific jobs)</td>
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</tr>
<tr>
<td>Executive development (identify specific jobs)</td>
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<tr>
<td>Group development (list specific programs)</td>
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<tr>
<td>Organization - development (list specific programs)</td>
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</tr>
</tbody>
</table>

*In-house programs.  **Out-of-enterprise programs.*
Numerical reports imply a degree of objectivity that may not be genuine.
Narrative reports may be viewed with skepticism because they lack hard numbers.
Narrative reports may imply a degree of subjectivity that may not be real.
Reports of all types must avoid information overload—readers can absorb only so much.

Avoiding Pitfalls

There are many traps awaiting the unwary training manager as he or she undertakes a needs assessment program. Here are some specific suggestions that will help the training manager avoid these pitfalls:

- Conduct needs analysis on a regular, proactive basis rather than on a reactive, crisis basis.
- Integrate needs analysis data with enterprise planning data.
- Use needs assessment approaches that take into account the realities of organizational policies.
- Distinguish clearly between what the organization says it wants and what it really needs.
- Distinguish clearly between organization, group, individual, and job needs.
- Avoid using staff perceptions or currently popular training strategies or fads to define training and development needs.
- Consult line managers and staff officers regularly on organization, training, and development needs.

CHECKLIST FOR NEEDS ASSESSMENT

Planning for Needs Assessment
- Are the following complementary types of needs assessment used:
  - Organization?
  - Group?
  - Individual?
  - Job?
- Are needs assessments conducted early in the process of analyzing, designing, and developing any type of training or development program?
- Are needs assessments conducted at least annually?
- Are the methods or approaches used the ones most likely to provide valid and reliable data at reasonable cost?
- Are the following assessment methods considered when plans are initiated for assessment:
  - Advisory committees?
  - Analyzing enterprise plans and forecasts?
  - Assessment centers?
  - Attitude surveys?
  - Critical incident surveys?
  - Group discussion?
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- Employees interviews?
- Exit interviews?
- Job description and applicant specification analyses?
- Management requests?
- Needs inventories?
- Modified nominal group technique?
- Nominal group technique?
- Observations of behavior?
- Outside surveys?
- Performance appraisals?
- Performance documentation and records?
- Product evaluation?
- Questionnaires?
- Skills tests?

Are the following criteria considered in selecting needs assessment methods:
- Extent of management involvement?
- Extent of employee involvement?
- Direct costs (personnel, including consultants, materials, and equipment)?
- Indirect costs (time away from the work area)?
- Time required for completion?
- Problem discrimination/differentiation capability?
- Relevance?
- Objectivity?
- Quantifiability?

- Is more than one assessment method used to verify and validate results?

- Are the following items carefully considered to ensure maximum participation, best possible return, and accuracy of data collected:
  - Target group(s)?
  - Sample size?
  - Method of announcement?
  - Follow-up methodology?
  - Testing instruments and cover letters?
  - Emphasis on the confidentiality of information provided by respondents or participants?
  - Use of simple, clear, and easily understandable vocabulary and sentence structure in questionnaires, surveys, and interviews?
  - Use of only fully trained administrators and interviewers?

Conducting Needs Assessments

- Are the assessment, its purpose, and its importance announced by top management?
- Are announcements made in the following ways:
  - On bulletin boards?
  - In company publications?

- Is union support for the assessment solicited before the project is launched?
- Designing Training and Development Systems

- Are individual participants in the assessment notified of the following in writing?
  - The purpose and importance of the project?
  - Specifically what is required of them?
  - The confidentiality of information they furnish?
  - The date, time, and place of the assessment activity?
- Are no-shows and people who fail to return completed questionnaires or other instruments by the date requested followed up by memo or phone call?
- Are assessment data systematically and carefully subjected to the following processes:
  - Tabulation?
  - Organization?
  - Analysis?
- Are the findings, conclusions, and recommendations of the assessment communicated to the following:
  - Management?
  - Unions?
  - Employees?

Using Needs Analyses

- Are the results of organization needs analysis used to:
  - Identify real organization needs?
  - Relate training needs to enterprise goals, objectives, and priorities?
  - Link organization needs to individual employee training and development needs?
  - Identify external forces or factors affecting the organization?
  - Detect internal changes in the organization?
  - Analyze reasons for high turnover, low productivity, high reject rates, or other bottom-line results?
- Do the results of group needs assessment form the basis for using interventions of the following types:
  - Team building?
  - Role clarification?
  - Leadership training?
  - Communication training?
  - Small-group problem solving?
  - Creative problem solving?
  - Action-planning workshops?
- Are the results of individual employee needs assessments used as a basis for providing training and development programs of the following types:
  - Assertiveness training?
  - Behavior modeling training?
  - Behavior modification training?
  - Communication training?
  - Computer literacy training?
  - Ethics training?
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- Executive development?
- Instructor training?
- Interpersonal training?
- Management development?
- Office skills training?
- Orientation and induction?
- Personal-growth training?
- Safety training?
- Sales and dealer training?
- Scientist and engineer development?
- Sensitivity training?
- Skills and technical training?
- Stress-management training?
- Supervisory training?
- Transactional analysis training?

For Further Reading and Viewing


Jaffe, Cabot L. "Historical and Future Perspectives on Assessment Centers" (60-min. videocassette). American Society for Training and Development, 1640 King St., Box 1443, Alexandria, Va. 22313-2043.


How To Improve Performance

BY CLAY CARR

Training is not always the answer to performance problems. This step-by-step method offers a more holistic approach to performance improvement.

Businesses increasingly turn to consultants to solve a host of problems. Meanwhile, trainers increasingly recognize that training alone won’t solve the problems they are being asked to fix.

Consider the following examples:

A plant manager asks an in-house trainer to help improve production by adapting some technical refresher courses. The trainer reviews the shop’s production reports and discovers that many workers frequently call in sick. The trainer suspects that the production problems reflect not a lack of technical expertise, but poor health.

A company that has implemented teams is unhappy with their performance. The company asks a consultant to run some short-training workshops to boost the morale and efficiency of the teams. The consultant finds that the team members have little opportunity to collaborate and improve their skills. The consultant recommends implementing a more structured training program.

A small business asks a consultant to smooth relations between hiring sales reps and consultants by teaching them some interpersonal skills. The consultant finds that the consultants have little knowledge of the company’s cultural norms and have trouble adapting to the company’s environment.

In each of these cases, instead of automatically designing a course or training session, human-performance specialists first identify the root causes of poor performance. Then they try to eliminate the causes by addressing the underlying factors that govern how well people perform.

The steps involved in determining how well employees perform their jobs and then taking the proper corrective action are described in this article.

Collect data
The method you choose for collecting data will depend on the amount of time you have available and the level of detail you seek. Here are some common methods for collecting data:

1. Which employees perform the jobs and then examine the productivity of their work. This is a quick but easy approach.

2. Review performance data available from such sources as product line reports, general sales reports, operations reports, and performance appraisals. This method is popular because it is quick, but it is not always dependable.

3. Conduct a formal written survey. This can be time-consuming, but it
a helpful foundation for focus groups and interviews.

Convene focus groups. This is probably the most efficient method of data collection, especially if you back it up with interviews.

Conduct group and one-on-one interviews. They can be helpful at the outset for sketching an outline of the problem and for supplementing any of the other methods. Interviews also are a good way to obtain information.

Throughout the data-collection process, you will look for clues to root causes of the performance problem. Here are some tips for organizing and examining data:

Look for patterns. Does performance improve the month before the annual merit-pay reviews? Did performance figures change after a new supervisor took over? Why does product quality rise and fall predictably over the course of a quarter?

Look for patterns behind the patterns. Ask what TQM disciples call the five whys. (The result is always: Why? Because the data active date. Why? Because it takes two weeks to retrieve the data from the system. Why?...)

"Chunk" the data. Do certain problems occur in tandem? Do problems arise only in certain areas, under certain conditions, or at certain times?

Diagram the processes. If wholes appear in the diagram, they indicate holes in the data. Look closely at any point at which responsibility changes hands; these junctures are a common source of problems.

Remember that collecting data and identifying causes are mutually reinforcing processes. Data suggest causes, and potential causes suggest directions for gathering more data. In part, developing expertise in performance improvement means learning to strike a balance between collecting too little data and collecting too much.

Designing the intervention

After analyzing root causes and before designing an intervention, you have to determine the depth at which you will attack the problem. Most performance problems exist on several levels. The deeper you delve, the greater the potential benefit. But the closer to the core of an organization that you attack a problem, the more trauma you create.

Health professionals describe medical interventions that produce trauma as invasive. To change performance, interventions interrupt existing practices, processes, and activities. The greater the intervention, the more invasive the intervention.

Change is:

- least invasive when it does not require personnel to change what they are doing;
- more invasive when it requires personnel to learn to do something new;
- most invasive when it requires personnel to unlearn something that they have been doing so they can learn to do it differently.

Interventions aimed at improving five steps to performance improvement:

1. Clearly define the problem as the client sees it.
2. Gather data to pinpoint the root causes of the problem.
3. Devise a remedy that addresses the causes, not the symptoms.
4. Decide on the quickest, most cost-effective way to apply the remedy.
5. After implementation, assess the remedy's success and side effects, and use the results in rerouting the improvement strategy.

Interventions must address one or more of the seven elements of performance. These elements are competence, goals, standards, feedback, means, opportunity, and innovation.

In general, interventions designed to increase competence are the least invasive. They include:

- task instruction;
- job aids, reference manuals and guides;
- audit methods designed to store information for easy retrieval;
- formal training of all kinds, which is more invasive the longer it lasts and the greater the change it attempts to produce.

Interventions designed to develop or clarify goals and standards and establish feedback systems are somewhat less invasive. These may include:

- indoctrination programs, such as training sessions, computer slide shows, and other methods to ensure employees more effective feedback, management, and social support.

The most invasive interventions are those that try to change all seven elements of performance. These interventions can take years to implement and require the full support of top management. Frequently, focusing interventions fail.
WHEN INTERVENTIONS FAIL, THEY CAN LEAVE ORGANIZATIONS WEAKER THAN THEY WERE TO START WITH

the desired improvement. Such efforts include:
- Conversion of an organization from a traditional hierarchy to one governed by self-managing teams
- Organization-wide implementation of TQM
- Large-scale cultural or transformational change programs

Minimizing resistance
The more invasive the change, the more anxious, confused, and inconsistent people will feel. The key to successfully intervening in an organization is anticipating and minimizing negative feelings.

The following seven principles enable you to estimate how strongly people will resist change. Each principle is presented with a suggestion of what you can do to minimize resistance:
- Performers resist changes they perceive as burdensome. Minimize resistance by presenting the change as a challenge.
- Performers resist changes that offer no payoffs. Clearly demonstrate the benefits that the change will bring.
- The longer it takes to implement a change, the more resistance it will inspire. Implement the change in stages so that it begins producing results quickly.
- If the change involves multiple functions or departments, it will prompt resistance. Limit the initial change to a few functions or departments—ideally one.
- People resist changes that alter their status, power, or relationships. Give people something to gain from giving up old advantages.
- People resist changes that conflict with individual and organizational values. Design the intervention so that it affirm existing values as much as possible without compromising the intervention.
- If performers doubt the change will take hold, they will resist it. Demonstrate that top managers support the change. Assign a sponsor with the clout and the staying power to ensure that the change will be implemented.

Assessment and assimilation

Assessment and assimilation are two distinct steps. In practice, many organizations assume their efforts well, but fail to assimilate what they have learned.

Lay the groundwork for assessment and assimilation during the design phase.
- Get agreement up front on objectives and criteria.
- Establish the baseline data and the method you will use to evaluate the success of the intervention.
- Wrap up the evaluation with a report that describes the lessons learned from the intervention. Spell out how these lessons will be used to refine the intervention.

Above all, remember that a small and successful intervention is better than a grandiose failure. Take to heart this extract from the Hippocratic oath administered to physicians: "First, do no harm." Failed interventions can leave organizations weaker than they were to start with.

Gain your organization's trust by starting out on a well-defined footing. And compiling high-quality data on which to base a sound intervention. A series of limited but meaningful interventions that build on one another will be more likely to bring about deep and lasting change than a single major intervention that hopes...
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- If the change involves multiple functions or departments, it will prompt resistance. Limit the initial change to a few functions or departments—perhaps one.
- People resist changes that alter their status, power, or relationships. Give people something to gain from giving up old advantages.
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Above all, remember that a small and successful intervention is better than a grandiose failure. Take to heart this advice from the Hippocratic oath administered to physicians—"first, do no harm." Failed interventions can leave organizations weaker than they were to start with.

Gain your organization's trust by sticking to a well-defined territory and compiling high-quality data on which to base a sound intervention. A series of insured but meaningful interventions that build upon one another is more likely to bring about than lifting changes than a single major incorrect that lapses.

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Skills Problems

Skills problems are the true province of training. In my seminars I am often asked the difference between training and education. Training is the act of passing on performance. Education is the act of passing on knowledge. There is a difference. Training is responsible for achieving results, and these results always take the form of a change in trainee skill levels. Education is much broader and more conceptual. It is not responsible for results; it is up to the student to pass or fail, to use the material or not. Training can educate, but it still must produce concrete results and must, therefore, teach measurable skills.

Skills problems can be addressed by training. When a problem crops up, before launching a full needs analysis ask yourself, "Is this a training problem?" If not, end your analysis there. If so, go ahead to the next step—gathering data to define the present levels of performance.

Gathering Data

Without further information it is not always clear exactly what kind of problem you've uncovered. If it is a skills problem, then you need to gather data to establish the present level of performance—your baseline against which you'll measure progress. But even if it is too early to tell if it's a skills problem, gathering data is still your follow-up step once a problem is discovered. Of course, if it's obviously not a skills problem, there is no point in pursuing it. If you are in doubt, however, or if the problem is clearly training related, you need to define the status quo—in other words, the need for training.

Ask yourself, "What information do I want?" In other words, what is happening? What skills are involved? What problems are created? What is the impact, in dollars, of these problems? What is the political or organizational structure surrounding these problems?

Next, determine what you are going to use the information for. Is the information to be used as a basis for developing a program? Will you use it to justify that program to management or as a means to cover yourself politically? Perhaps you'll use it as a means of convincing those who are part of the problem that something must be done. Will you use the data to motivate your trainees? Choose the method or combination of methods that will most easily and accurately supply the information you need.

There are seven formats for gathering information, depending on the depth and detail you need. Most of us don't have the time to be as
Guidelines for Gathering Data

1. What information do I want?
   - What is happening?
   - What skills are involved?
   - What problems are created?
   - What is the dollar cost of the problems?
   - What is the political climate surrounding these problems?

2. What use will the information have?
   - Is it a basis for developing a training program?
   - Will you use it to justify that program to management?
   - Will it cover you politically?
   - Will it convince those who are part of the problem?
   - Will it motivate the eventual trainees?

3. Which method or combination of methods will most easily and accurately supply the information needed?

Thorough as we'd like. Choose the method that produces adequate results for you and that is feasible for your organization. If you have the time and want more scientific evidence, use a second method to verify the findings from the first. Remember, the simpler the better; but remember also that you are after real data, and the results of your training will depend on the accuracy of your findings. The standard data-gathering methods are arranged here in order of difficulty, from easiest to most difficult:

1. Field observations
2. Surveys
3. Interviews
4. Focus groups
5. Record checks
6. Task analyses
7. Assessment sessions

Let's look at each one in turn.

Field Observations

Going out and looking at the problem is one of the simplest and best ways of establishing the performance baseline. I heartily recommend all
Preparing a Needs Analysis

trainers do so on a regular basis whether or not they are conducting a needs analysis. If you've trained people, walk around and see how they are doing. It is one of the best ways to monitor your own effectiveness.

To perform field observations specifically for a needs analysis, consider the following:

- If you are likely to need it, get permission from whoever is in charge of the people you want to observe. This usually means you will have to explain why you want to observe the people and you will have to persuade that individual to approve. To bypass such a person, however, could make you an enemy who could undermine any future training you might give to those subordinates.

- Prepare a reasonable, persuasive rationale for your observations. I've had success when I outline my ignorance of current procedures and emphasize that, as a trainer, I'd like to learn how the department operates so I don't teach useless or wrong ways. This approach is usually persuasive because it is nonthreatening. At the same time you are being persuasive, you must open up the possibility of training to change the department in such a way that they won't feel stabbed in the back. Diplomacy is a must. An enemy can only hurt you, but a friend can be relied on. In effect, you need to balance your humility in wanting to learn with the frank knowledge that changes might result.

- Know what it is you are looking for. Have your objectives clearly framed. You should be looking to discover what is happening—what the process is. You should also investigate what skills are involved and what the apparent problems are (if any). Analyze what the dollar impact of those problems is. Lastly, find out about the political climate and organizational structure involved. Be as casual and unobtrusive as possible. Try not to make a big thing of it. Simply walk around and observe, ask a few questions, but always keep your activity informal.

Surveys

Send out a written survey. Despite much sociological literature to the contrary, you can design and interpret an effective employee survey without outside help. You don't need a technical document that plumbs many sutletics at once. You don't need to validate your findings with statistical safeguards. You're not conducting a scientific study. Apart from the data it generates, no one will ever see your survey except your colleagues and those who respond to it. If you are concerned about absolute accuracy, the data can be changed or verified through obser-
vations and interviews. Otherwise, make it easy on yourself. If you know what you want, ask for it—simply and directly.

In a survey you are asking employees to evaluate some aspect of their work. In order to do this effectively you need to know in advance exactly what you are looking for. Are you assessing skill levels or attitudes? Surveys are better at assessing attitudes than they are at reflecting skills, but as you can see from the sample survey in Figure 5-1, even skills can be evaluated.

As you don’t want to survey everyone, you also need to know to whom and to how many you will need to distribute surveys. Once you have decided who, how many, and what you are looking for, you can set specific objectives for your survey so that you will know when you’ve found what you’re looking for. With objectives in mind, now you can frame your questions. Figure 5-2 lists examples of each of the types of questions available to you. (Further examples are offered in Chapter 6.) There are several points to consider in using these types of questions to create a survey.

* It is an interesting paradox that the more open-ended the questions are, the harder it will be to gather usable, statistically sound information from them. However, the more closed-ended the questions are, the less real information they reveal. You must balance between both extremes. (See Figure 5-2.)
* The harder it is to answer a question, the harder it will be to interpret the answer.
* Decide on exactly what information you want to get from each question before you frame it.
* Be sure to ask for only one piece of information at a time. If the question is in any way ambiguous or confusing, the answers you get will be unclear and equally confusing.
* Keep your survey as short as possible. No one wants to slave for hours over a series of questions. The shorter the survey, the more likely it will be answered.
* Keep it friendly. If the workers responding are forced to run a risk by, say, revealing unkind feelings toward their supervisors, they will most likely either lie or not fill out the questionnaire. Even if you make the questionnaire anonymous, try to minimize judgmental comments that might provoke a sense of risk in those responding.
* Remember: each question must perform two tasks: It must gather the desired information, and it must do so in a usable form.
* Key the survey to the educational and work levels of the group you plan to survey.
Writing Training Objectives

This chapter deals with the problems of writing and organizing training objectives. Although course outlines, programs of instruction, or instructor guides may be available to the trainer, most of these documents are of limited help in planning training activities. Furthermore, as emphasized earlier, the only source of valid training objectives is systematically collected and objective job or task data. The effectiveness of the instructional system depends on the efficiency of the trainer in selecting and writing meaningful objectives. This chapter provides the trainer with general principles and procedures that can function as guides to the selection and writing of appropriate and usable training and development objectives.

Upon completing this chapter, the reader will be able to perform as follows:

- Behavior: Write training and development objectives in performance (behavioral) terms.
- Conditions: Given: complete job or task analysis data for a specific job, critical task lists, procedural guides, appropriate forms, and clerical assistance.
- Criterion: Objectives will be complete, realistic, grammatically correct, and consistent with the standards defined in this chapter.

Deficiencies in Statements of Objectives

The selection of objectives is a judgemental procedure in which qualified personnel closely scrutinize the critical tasks and job performance measures developed during the analysis.
phase of systems development. The selection process poses one set of problems. But after selection, there are even more critical problems, and these relate to the wording of the objectives.

Selection

The criteria used in making selection decisions must ensure consistency with the job and task data collected during the analysis step. This is not as simple as it may seem, because there are important differences between the performance of a task under real job conditions and learning how to perform the task in a training environment. These differences must be recognized and taken into account. There are two additional pitfalls to avoid in selecting objectives. The first is exceeding job requirements in terms of levels of skill and knowledge. The second is the flip side of the first: failing to include all the knowledge and skills needed to perform the task at the required level of proficiency. These traps must be avoided in the selection process.

Formulation

Part of the waste that occurs in training is directly due to the fact that objectives, even if valid, are not stated in terms that permit the development of optimally effective training programs. Too often the objectives of training are stated vaguely. Typically, statements of objectives are worded in such ways as "to provide the student with a general knowledge of . . . ." or "to develop an understanding of . . . ." or "to develop the ability to . . . ." Statements like these are ambiguous; they can be, and inevitably are, interpreted differently by staff, trainees, and instructors. They are imprecise. They do not provide the direction and guidance needed to select instructional methods, to develop instructional materials, or to construct valid evaluation instruments and devices. Objectives must be understood by both the instructor and the trainees, and therefore, if precise and efficient training is to be provided, objectives must be stated in behavioral terms. This means that they must describe clearly and unambiguously what the trainee must be able to do, the conditions under which he or she must be able to perform, and the standard or criterion of acceptable performance, both at critical points during the development of job skills and at the end of the training program.

Uses of Objectives

Training objectives provide the basis for all the remaining steps in the development of an instructional system. They constitute the real heart of a training program. The quality of other instructional decisions rests heavily on the adequacy of statements of objectives. In addition, training objectives serve certain administrative purposes. Some of the more important uses of training objectives follow.

Consistency in the Design of the Training System

Training systems are composed of several interacting and integrated subsystems. There are the human elements—the instructors and the trainees. There are the material ele-
Writing Training Objectives

ments—the equipment, training aids, texts, handouts, and the like. And there are the organizational and strategy elements—the methods, techniques, systems of trainers and instructor organization, and media. To make sure that all these elements dovetail and support each other, they must be selected and used on the basis of a set of objectives that are common to all subsystems.

Effective Communication

The main function of statements of objectives is communication. Instructional objectives that are sent clearly by the sender and received ungarbled by the receiver are more likely to be achieved than objectives that are not clearly communicated. In short, with clearly stated objectives, instructors can do a better job of instructing and trainees can do a better job of learning. The instructor knows precisely what they are attempting to do, and trainees know what is expected of them in terms of behavior or performance as a result of training. Statements of objectives are therefore useful to instructors to develop means of checking on their own and the trainees’ performance. Instructors may also use objectives to inform their colleagues, substitute instructors, department heads, training supervisors, managers, and executives about the content of the program and to tell them how trainees will be able to perform when they have completed the training system.

Selecting Appropriate Course Content

Well-stated objectives provide a practical and objective means of determining the specific facts, principles, concepts, and skills that must be included in a training program. They take much of the guesswork out of deciding what content is pertinent and what is extraneous. Objectives represent the skeleton or framework of a training program. The flesh and muscle consist of the course content. Judicious choice of objectives permits the selection of the right kind and amount of content and helps avoid the dangers of both undertraining and overtraining.

Selecting the Most Suitable Instructional Strategy

Well-stated objectives provide a clear description of job requirements. Because objectives can be written in a fashion that avoids equivocation and ambiguity, the process of selecting the optimum method, medium, and system of organization is greatly simplified. An instructor who knows precisely what the trainee must be able to do upon completion of the instructional block or unit can be more objective about selecting the strategy that will accomplish the goal.

Clear-Cut Instructor and Trainee Goals

Training objectives permit both the instructor and the trainee to know precisely what is required of the student at the end of any instructional unit or course. This knowledge provides the trainee with a sense of direction and enables him or her to determine progress toward the attainment of the goal. Such knowledge is, in itself, a strong motivating factor. Knowledge of goals helps the instructor to avoid gaps and unnecessary duplication in instruction. In short, well-stated objectives make learning more effective and more efficient.
Types of Objectives

Training objectives are statements describing the changes in behavior or performance that are the desired outcomes of trainee and instructor activity and interaction. They may also be referred to as goals, purposes, aims, or outcomes. Changes in behavior include new, modified, or improved skills (manual, manipulative, verbal, problem-solving, supervisory, and managerial); abilities involving the application of facts, principles, concepts, or ideas; and emotionalized controls (attitudes, interests, ideals, and appreciations). Therefore, a statement of objectives expresses the skills, abilities, knowledge, attitudes, and the like that are the desired outcomes of specific training activities. This applies whether the objectives are statements for a total training program or for an individual lesson.

Classification of Objectives

Objectives may be classified in many different ways. For purposes of this discussion, however, they will be divided into two categories—primary and derived:

1. Primary Objectives. A primary objective is one of the core learnings of a training program or a major unit of that program. It is an objective of central and dominant importance in an instructional system. It gives meaning, clarity, and unity to all learning activities in the training program. A primary objective may deal with the development of a manipulative skill, such as the repair of equipment; it may involve the acquisition of a special ability, such as employment interviewing; or it may involve the development of complex problem-solving skills in a managerial role.

2. Derived Objectives. The attainment of the primary objective often hinges on the development of contributory knowledge and skills. Certain fundamental understandings, concepts, principles, or elements of skill are often required to support the attainment of the primary objectives. These are not mere steps toward the primary objective; they are integral or closely related elements of the primary objectives.

Usually, derived objectives are the heart of an individual lesson. For example, if the development of skill in repairing equipment is the primary objective, derived objectives might involve the skill of soldering, the use of mathematical equations, the use of test equipment, and a host of other integral skills, abilities, and knowledge supports. In employment interviewing, derived objectives might involve the ability to use probes, to prepare a rating scale, to establish rapport, and the like.

Forms of Statements of Objectives

Both primary and derived objectives should be stated in a form that will make them most useful in selecting methods and materials, in guiding training activities, and in evaluating results. Objectives can be stated in many ways, but few of the traditional approaches to objectives statements meet the requirements of effective and efficient instruction. Four of the most common forms are instructor-centered, subject-matter-centered, trainee-activity-centered, and trainee-performance-centered. Only the last form provides the precision required for adequate planning, conduct, and evaluation of instruction.
1. **Instructor-Centered Objectives.** Objectives can be stated in the form of activities that the instructor is to perform. Here are some examples of instructor-centered objectives:

- To demonstrate the operation of a turret lathe
- To discuss the need for identifying gaps in the work history of a job applicant prior to the employment interview
- To develop in the trainee an appreciation of the need for teamwork
- To demonstrate the proper method of inserting a hypodermic syringe

These are statements of what the instructor does, but they really are not statements of training objectives or of the desired changes in the behavior or performance of the trainees. For this reason, they are totally inadequate as guides for planning, conducting, or evaluating instruction.

2. **Subject-Master-Centered Objectives.** Objectives can also be stated in the form of topics, concepts, principles, or other elements of the content to be taught in a training program. Here are a few examples of objectives stated in terms of the subject matter to be taught concerning the operation of a 10-kW power generator:

- Nomenclature
- Preventive maintenance
- Starting and warm-up procedures
- Refueling procedures
- Emergency procedures
- Close-down procedures
- Safety precautions

This form of objectives statement identifies the area of content to be taught and learned, but it does not indicate what the trainees are to be able to do after the training. What are they to be required to do with power generators? Memorize the content of the lessons? Apply principles? Operate the equipment? Operate it how well? Operate it under what conditions? The objectives as stated do not provide the answers to these or to a lot of other critical questions.

3. **Trainee-Activity-Centered Objectives.** Objectives can also be stated in terms of what the trainee is to do during the training period. For example, the following objectives are set forth in terms of trainee activity:

- To learn to operate a forklift
- To learn company cost-accounting procedures
- To learn to adapt procedures and routines to the needs of operating employees
- To learn the principles of magnetism
- To disassemble a carburetor
- To learn PERT

Here again, the form of the objectives statement does not specify very clearly what the trainee is to be able to do after the training, nor does it establish a criterion or standard of acceptable performance.

4. **Trainee-Performance-Centered Objectives.** Last, training objectives can be stated in terms of what the trainee is to be able to do upon completion of training—or at any point during the training—including how well he or she is to be able to perform. This form is illustrated as follows:

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3. Trainee-Activity-Centered Objectives. Objectives can also be stated in terms of what the trainee is to do during the training period. For example, the following objectives are set forth in terms of trainee activity:

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Interviews

There are two problems with interviews. They are very time-consuming, and much of what is discussed may be irrelevant. The first problem can be solved by limiting your interviews to checking the accuracy of data you’ve collected in other ways. Simply select individuals at random from the group you’ve observed or surveyed. Alternatively, interview only management or supervisory personnel to clarify the data you’ve gathered. This approach has the added benefit of establishing connections with these managers or supervisors. It also introduces the risk that they will distort or falsify to cover poor performance. If that is a problem, combine the interviews for a valid cross section.

The second problem, too much irrelevant data, can be avoided by carefully planning your interviews. The interview generates the fullest and most complete data. It is an integral part of both task analysis and assessment. It can be an important part of field observation and, as just seen, it also can be an effective check on survey data. If you plan your interviews, they can give you very effective results with a minimum investment of time.

Here are eight steps for planning and using the interview format for needs analysis data gathering:

1. Select key people. Unless you want first impressions, new employees probably won’t give you meaningful data. When interviewing supervisors, select those who will tell you what you need to know.
2. Keep your interviews short. Not only don’t employees have time to spare, but the longer the interview is, the more time it will take you to sort the data.
3. Establish your goals before you set up the interviews. Know what you want to accomplish in each case. Don’t think it, write it down. Keep that goal in mind as you interview so that you stay on the topic and the interview is short.
4. Know to whom you are talking. Do your homework and find out where they stand in the political and organizational network.
5. Plan the questions and the sequence you are going to use. Then use them. Remember, you need to know what is happening (how they do what they do), what skills are involved, what problems there are, what these problems cost, what the political and organizational structure is surrounding these tasks, and what their attitudes are toward the work and the problems. If there are delicate or emotional issues, you may have to think through your choice of words and phrases. Use open-ended questions and practice active listening. (See Chapter 4.)
Preparing a Needs Analysis

Creating Surveys

1. Decide what population will be surveyed.
2. Decide on the size of the survey population.
3. Decide how deeply you will probe (procedural, political, personal).
4. Isolate skills involved (job descriptions, task analyses, etc.).
5. Define a set of attitudes you want to examine.
6. Set your objectives. (What exactly are you looking for and how will you know when you find it?)
7. Create questions to examine each skill and attitude in each category.
   • Ask for only one idea or piece of information at a time.
   • The harder it is to answer a question, the harder it will be to interpret that answer.
   • Make the questions easy to understand and respond to.
   • Try to find a previously successful survey and adapt it.
   • Keep it as short as possible.
   • Keep it as friendly as possible.
8. Test the questions on loved ones, associates, potential trainees, and on your clients!
9. Adjust and refine as needed.
10. Gain final approval (if necessary).
11. Let the survey population know that they will be surveyed (advertise).
12. Survey.
13. Evaluate according to your objectives.
14. Don't try to interpret too much from limited data.
15. Let the respondents know what the results were.

Leaves in convenient places tend to produce honest responses but have the lowest return rate.

When you compile the results, don't force the data. If you draw too many conclusions, you could end up training to solve the wrong problems. If there are job descriptions, company goals, or personal objectives involved, measure your results against them. Then publicize your survey. Try to tie it in with some major company thrust or activity. Let management know what your survey is, why you are conducting it, and what should happen because of the results. Let everyone know the general results (overall response, percentage breakdowns for each answer, and so on). Use the in-house publication to call attention to the survey and to thank the respondents.
<table>
<thead>
<tr>
<th>Type of Question</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

**Case History**

Describe what you would do in the following situation: You have just finished working up a large spreadsheet and have administered a 'Print' command. The printer has begun to print the copy. Suddenly your assistant hands you a fax that has just arrived which will change some of the figures on the spreadsheet. What should you do?

**Essay**

Describe how you would perform each of the following tasks:

- (a) Create a bar chart in Excel
- (b) Design a page layout in Microsoft Word for a newsletter
- (c) Incorporate a chart in Microsoft Word and have the body copy conform to it

*All of the computer operation examples used here reflect Microsoft Word or Microsoft Excel on a Macintosh SE computer.*

- Be sure to gain whatever approvals you will need before you distribute your survey.

Decide how you will distribute the surveys. They could be given to employees as they leave work, mailed to their homes, included with their paychecks, inserted in the in-house publication, or placed in the cafeteria to be picked up at will. Including the survey with the paycheck carries authority and may get a higher response, but that response is less likely to be critical. Distributing surveys to employees as they leave work gets a response that is usually balanced. Mailing them to the home will most likely give you the most honest results, but this also sometimes gets a low response. Surveys inserted in in-house publications or
Preparing a Needs Analysis

<table>
<thead>
<tr>
<th>Type of Question</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Select “Set Styles” menu; select “open” to copy a style</td>
<td></td>
</tr>
<tr>
<td>3. Select “Set Styles” menu; create individual styles</td>
<td></td>
</tr>
<tr>
<td>4. Select “Template” from desktop; copy template to new document</td>
<td></td>
</tr>
<tr>
<td>5. Create document “Workbox” at the style commands to be used as needed</td>
<td></td>
</tr>
<tr>
<td>6. Select “Page Setup” as part of your format to link documents in sequence for printing</td>
<td></td>
</tr>
<tr>
<td>7. Use “Page Preview” to number pages or change margins</td>
<td></td>
</tr>
</tbody>
</table>

Menu response

Of the following procedures, circle whether you perform them (a) regularly, (b) occasionally, (c) rarely, or (d) never.

1. Linking printing sequences
   (a) (b) (c) (d)
2. Using two or more columns on a page
   (a) (b) (c) (d)
3. Multiple fonts in one application
   (a) (b) (c) (d)
4. Immediately back up work completed
   (a) (b) (c) (d)

Semantic differential

Evaluate how you feel about the following by marking (a) excellent, (b) good, (c) fair, or (d) poor.

1. Microsoft Excel
   (a) (b) (c) (d)
2. Microsoft Word
   (a) (b) (c) (d)
3. Aldus Pagemaker
   (a) (b) (c) (d)
4. Graphic Works
   (a) (b) (c) (d)

Descriptive lists

List and number in sequence the steps you follow when you insert a chart or graph into the body copy.

1. 

2. 

3. 

(158 Words)
Figure 5-2. Question formats (arranged from most closed to most open).

<table>
<thead>
<tr>
<th>Type of Question</th>
<th>Example</th>
</tr>
</thead>
</table>
| Yes/no           | Would you use "Option/Command/M" to select an entire document?  
Would you favor a ten-minute coffee break in the morning? |
| Multiple choice  | Which of the following procedures for selecting a paragraph is incorrect?  
(a) Place the cursor at the beginning of the paragraph/scroll to the end of the paragraph/place pointer after the last word of the paragraph/press "shift!while holding "shift" down, click mouse  
(b) Place pointer at beginning of paragraph/click and hold mouse down/drag diagonally through the paragraph/release mouse  
(c) Use extreme left margin selection area/double click on mouse  
(c) All of the above |
| Menu selection   | Of the following procedures, check the ones you do not normally follow:  
____ 1. Use the "window" menu to change from one opened document to another  
____ 2. Use a menu command to underline copy  
____ 3. Use the "format" menu to copy a style for a new document  
____ 4. Set up and use a personal Glossary to save time  
____ 5. Close manually each document and window on the desktop before shutting down  
____ 6. Use "Command" + "Q" to change point size to a smaller size  
The following are steps that might be used in formatting a document. Check the ones you would use.  
____ 1. "Tab," "space," and "return" to indent and create columns |
D. Circle the response that most accurately describes your approach to supervision.
   1. I meet with my subordinates
      (a) on a regular basis.
      (b) as needed for new assignments and follow-up.
      (c) when they ask me to.
   2. I generally give feedback.
      (a) when work needs to be improved.
      (b) when work is well done.
      (c) when asked to.
   3. I wish this company would
      (a) offer more skills training for my subordinates.
      (b) provide better talent for me to hire.
      (c) relate training to real needs.

E. Please provide a written response to each of the following:
   1. What do you see as your major challenge as a supervisor this year?
   2. What do you feel are your personal strengths as a supervisor?
   3. In what areas do you feel you could improve your supervisory skills?

Thank you.

Name: [optional]

- If you have a previous survey that was successful, why reinvent the wheel? Use that format.
- Test the survey beforehand. Try it out on friends and relatives, on coworkers, and if possible, on several members of the client population itself; be sure that you are neither ambiguous nor threatening and that you will get the information you seek.

Next continues on page 124.
B. List the steps you take in creating your performance plan.

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 

C. Please respond to the following by circling one of the numbers on the scale: (1) means that the statement is never true for you, (2) means that it is rarely true for you, (3) means that it is sometimes true for you, (4) means that it is usually true for you, and (5) means that it is always true for you.

1. I plan my day's activities in advance. 
   1 2 3 4 5
2. I hardly ever accomplish all that I planned. 
   1 2 3 4 5
3. My department is so busy it is virtually impossible to plan my time. 
   1 2 3 4 5
4. I usually accomplish the important things I have planned. 
   1 2 3 4 5
5. I feel that there is just not enough time to get all of the things done in my job that should be done. 
   1 2 3 4 5
6. I find I'm the only one who knows how to get a project accomplished. 
   1 2 3 4 5
7. I work the longest hours of anyone in my unit. 
   1 2 3 4 5
8. I suffer burnout from the heavy demands of being a supervisor. 
   1 2 3 4 5
Preparation of Needs Analysis

Figure 5-1. Sample survey.

**Supervision Skills Analysis Questionnaire**

*Purpose:* To determine whether there is a need to provide basic supervisory training to current supervisors; specifically to get a "fix" on planning and organization skills—including time management, delegation, and effective communication.

A. Please respond to each of the following statements with a yes, meaning it is true for you, or a no, meaning that it does not describe your activity or feelings correctly.

1. I feel that I fully understand the overall broad business objectives of our company for the next year.

2. I feel that I fully understand the expectations for the next year for the unit I manage.

3. I have developed a performance plan for my unit for the next year tied to the company objectives and expectations for my unit.

4. I have shared this unit performance plan with my manager (superior).

5. I have shared this performance plan with my subordinates.

6. I have provided ideas/input to my manager to consider in the overall planning effort.

7. I have elicited input from my subordinates for planning at the unit level and above.

8. I don’t have time to think very much about performance planning. I just need to get the job done.

9. My subordinates would not want to participate in performance planning. They want me to be the boss.

10. I need some further instruction in performance planning.

(Continued)
Writing Training Objectives

The trainee will be able to calculate the square roots of six-digit numbers, including decimals, with complete accuracy, without using tables of square roots, a slide rule, or a calculator.

The trainee will be able to operate a keypunch at the rate of 40 words per minute with less than one percent error for a period of 10 minutes.

The trainee will be able to identify, locate, and repair any one of ten common malfunctions in the radio receiver R 390/URR within a period of 60 minutes.

The trainee will be able to read, interpret, and use IBM 360/40 runs as a basis for scheduling and controlling production.

This form of statement of objectives expresses the desired changes in behavior—the learning outcomes—in terms of skills and abilities. The trainee is required to perform or do something at a certain level of proficiency before being considered to have achieved the goal.

This form is the most useful one in any type of training program because it lends itself best to objective evaluation of results. The performance element of this type of training objective is readily recognizable: to calculate, to operate, to record, to repair, and so forth.

Examination of these abbreviated objectives reveals that they include both the performance aspect and the content aspect. In other words, they indicate what the trainee is to be able to do with what. Further study of these objectives indicates the necessity for the formulation of derived or contributory objectives needed to attain the primary objective. For example, take the first objective, namely, "will be able to calculate the square roots of six-digit numbers.

"To reach this objective, more specific objectives related to the knowledge required and the elements of skill necessary for the attainment of this objective must be delineated. This can be done either through a statement of the derived objective or through a statement of the content and learning activities essential to the attainment of the primary objective. Obviously, a statement of the derived objective is eminently preferable.

Categories of Objectives

There are four categories of learning objectives: information, mental skills, physical skills, and attitudes. Differentiation of these categories is essential when writing statements of objectives. It is also necessary when learning strategies and activities are selected later in systems development.

Information. Information learning objectives require the trainee to recall knowledge to accomplish some task. For example, the trainee may be asked to recall the formula for Ohm's law in order to calculate the resistance in an electric circuit. Information objectives involve recalling rules, facts, names, places, nomenclature, rules, formulas, definitions, concepts, or principles.

Mental Skills. Mental skills learning objectives require the trainee to identify, classify, or solve problems that involve cognitive processes. For example, the trainee may be asked to analyze a case study of an automobile assembly line operation to determine the cause of a labor-management confrontation. Mental skills objectives involve identifying symbols, classifying objects, symbols, and concepts, using principles...
and rules; discriminating or detecting differences; using verbal information; decision making; and problem solving.

**Physical skills.** Physical skills learning objectives require the trainee to perform some physical or manipulative activity. For example, the trainee may be asked to install a car radio antenna. Physical skills objectives involve performance of gross motor skills; steering, guiding, and positioning movements; and voice communicating.

**Attitudes.** Attitudes learning objectives are usually not observable but are reflected in the decisions or choices people make. Therefore, this type of learning objective usually requires the trainee to make decisions and choices. For example, the trainee may be asked to choose between two marketing strategies, one ethical and the other unethical. The trainee who chooses the ethical strategy can be said to have displayed a positive attitude toward ethical behavior.

**Writing Performance-Centered Objectives**

A meaningful and useful objective clearly and unambiguously pictures what the trainee will be doing when demonstrating a specific desired behavior or behavior pattern. To communicate objectives clearly and get ideas across correctly, these five rules must be followed:

1. **Avoid unfamiliar words.** Consider the reader's comfort, interest, and capacity to understand. Unfamiliar words make no mental impression, so use only words that you are certain the reader of the objective will understand.
2. **Do not confuse or misuse words.** It is easy to make mistakes when writing, but errors can be avoided if you develop a strong conscience. An old admonition that applies is: "When in doubt, look it up or leave it out."
3. **Be terse.** Brevity makes written communication easier to understand. It is difficult to comprehend the intended meaning of long and involved sentences. Use only one idea in a sentence.
4. **Seek simplicity.** Use simple, short words, phrases, and sentences to keep the "fog count" down. Economize on adjectives and language flourishes. Make every word count.
5. **Read what you write.** After following the preceding four rules in writing objectives, there is more to be done. You must read the objectives to determine whether the words you have used are the right ones, saying what you wish to convey.

**Vague Terms vs. Precise Terms**

As pointed out earlier, personnel engaged in education and training have customarily used words and phrases in writing objectives that have no universal meaning. Their products deserve the label "pedagogy." Consider the following examples of vague pedagogical terms and the clearer expressions of learning goals in these two listings.
Writing Training Objectives

Vague Terms
To provide a general knowledge of
To provide a working knowledge of
To qualify
To know about
To understand
To develop an appreciation for
To be familiar with
To perceive
To be aware of
To comprehend

Precise Terms
To calculate
To adjust
To install
To construct
To select
To differentiate

Characteristics of Performance-Centered Objectives

A performance-centered objective is a statement that clearly communicates an instructional intent; that is, it describes precisely a desired change in the behavior of a trainee. Mager has identified three essential characteristics of performance objectives:

1. They Identify the Terminal Behavior. The statement of an objective must identify exactly what trainees must be able to do at the end of an instructional unit or complete course of instruction to demonstrate that they have achieved the desired behavior. The learned behavior may involve the application of knowledge or the demonstration of a specific skill or constellation of skills.

2. They Describe the Conditions of Performance. The statement of a performance objective must describe clearly and completely the conditions under which trainees are to demonstrate the behavior. That is, the conditions of the objective identify what trainees will be given to use in doing the job (tools, equipment, job aids, references, materials), what they will be denied (tools, equipment, and the like), what assistance they will have (if any), what supervision will be provided, and the physical environment in which they must perform (climate, space, light, and the like).

3. They Set a Criterion of Acceptable Performance. The statement of a performance objective must describe how well trainees must be able to perform. The criterion or standard establishes the minimum performance requirements for a duty, task, or job element. To do this, the objective statement must prescribe the quality of the work product or service produced (accuracy, completeness, clarity, tolerances, and the like); the quantity of work produced (the number of work units completed), the time allowed to complete the job, duty, task, or element; or any combination of quality, quantity, and time standards.

Writing Performance-Centered Objectives

Step 1. Identify the desired behavior. The essence of a performance objective is found in the description of observable, end-product behavior. By definition, performance objectives are statements that describe behaviors that are to become established.

either during or at the end of a sequence of instruction. They can be seen and measured.

To meet this standard, the behavioral statement must begin with a verb, completely
describe the performance, describe a meaningful unit of performance, be highly relevant
to the job or task, be accurate and precise, and avoid overlapping other behaviors.

Here is an example of an inadequate behavioral statement: To develop an under-
standing of the 407 accounting machine. This statement is difficult to interpret because
it does not picture the trainee displaying learned behavior. Instead of describing the
learner doing something, it sketches an abstract state of mind that in some way or
another relates to an accounting machine. Although many learning outcomes are by
nature abstract, it is also true that these learnings have some outward manifestation that
makes the understanding or apprehension observable. If an attempt were made to deter-
mine the behavioral requirement hidden in the objective as stated, it might be estab-
lished that the trainee really must be able to identify by name each of the controls on
the front panel of the 407 accounting machine, or construct an operational flow chart
of the 407 accounting machine, or troubleshoot and locate specific malfunctions in the
407 accounting machine. It should be apparent that these statements are ominously more
precise in communicating the behavior that the trainee is really expected to acquire.

Another relatively common approach to the statement of training objectives is found
in the use of the term “working knowledge”—for example, the trainee must have a
working knowledge of the radio receiver R-390A/URR. Although the phrase “working
knowledge” contains a strong implication that some definite actions are to be performed
with the receiver, the statement does not provide information about what these actions
are. Does the working knowledge mean an ability to operate the receiver? Or does it
mean that the trainee can list the operational characteristics of the receiver, or diagram
signal flow through the components? Whatever the case, the objective must picture the
trainee doing something with or to the receiver as a result of training, as opposed to
leading him or her to some vague intellectual state.

Here are some examples of acceptable statements of behavior:

- Translate any decimal number into its binary equivalent.
- Locate any malfunctioning component in a standard superheterodyne radio
  receiver.
- Identify and select all defective line bearings from a mixed sample of line
  bearings.
- Connect and solder a wire to a terminal lug.
- Execute a radar.
- Code a message.
- Test an inducer.
- Plan a lesson.
- Calculate a value.
- Identify the windings on a multicap transformer.
- Calculate the magnetic azimuth between any two map points.
- Adjust head bolts.
- Construct an organization chart.

A list of verbs appropriate for use with the four categories of learning objectives appears
in Figure 9-1.

Step 2. State the required conditions under which the behavior will be performed.

Another essential part of a complete and explicit statement of an objective is the speci-
Figure 9.1 Examples of verbs appropriate for use with the four categories of learning objectives.

<table>
<thead>
<tr>
<th>Information</th>
<th>Mental Skill</th>
<th>Physical Skill</th>
<th>Attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administer</td>
<td>Modify</td>
<td>Fix</td>
<td>Accept</td>
</tr>
<tr>
<td>Define</td>
<td>Monitor</td>
<td>Adopt</td>
<td>Adopt</td>
</tr>
<tr>
<td>Develop</td>
<td>Plan</td>
<td>Agree</td>
<td>Advise</td>
</tr>
<tr>
<td>Describe</td>
<td>Prescribe</td>
<td>Assign</td>
<td>Advocate</td>
</tr>
<tr>
<td>Explain</td>
<td>Program</td>
<td>Build</td>
<td>Approve</td>
</tr>
<tr>
<td>Express</td>
<td>Process</td>
<td>Inventory</td>
<td>Bargain</td>
</tr>
<tr>
<td>Identify</td>
<td>Regulate</td>
<td>Join</td>
<td>Choose</td>
</tr>
<tr>
<td>Inform</td>
<td>Report</td>
<td>Lay out</td>
<td>Cooperate</td>
</tr>
<tr>
<td>Interpret</td>
<td>Respiration</td>
<td>Maintain</td>
<td>Coordinate</td>
</tr>
<tr>
<td>Itemize</td>
<td>Research</td>
<td>Manipulate</td>
<td>Control</td>
</tr>
<tr>
<td>Label</td>
<td>Review</td>
<td>Observe</td>
<td>Decide</td>
</tr>
<tr>
<td>List</td>
<td>Schedule</td>
<td>Overhead</td>
<td>Defend</td>
</tr>
<tr>
<td>Name</td>
<td>Sense</td>
<td>Perform</td>
<td>Determine</td>
</tr>
<tr>
<td>Orient</td>
<td>Study</td>
<td>Pilot</td>
<td>Direct</td>
</tr>
<tr>
<td>Outline</td>
<td>Supervise</td>
<td>Process</td>
<td>Endorse</td>
</tr>
<tr>
<td>Recite</td>
<td>Survey</td>
<td>Remove</td>
<td>Guide</td>
</tr>
<tr>
<td>Read</td>
<td>Teach</td>
<td>Repair</td>
<td>Facilitate</td>
</tr>
<tr>
<td>Record</td>
<td>Train</td>
<td>Replace</td>
<td>Judge</td>
</tr>
<tr>
<td>Recommend</td>
<td>Translate</td>
<td>Sketch</td>
<td>Justify</td>
</tr>
<tr>
<td>Relate</td>
<td>Translate</td>
<td>Sort</td>
<td>Mediate</td>
</tr>
<tr>
<td>Specify</td>
<td>Transact</td>
<td>Test</td>
<td>Negotiate</td>
</tr>
<tr>
<td>State</td>
<td>Transcribe</td>
<td>Transmit</td>
<td>Persuade</td>
</tr>
<tr>
<td>Tell</td>
<td>Recommend</td>
<td></td>
<td>Prescribe</td>
</tr>
<tr>
<td>Testament</td>
<td>Resolve</td>
<td></td>
<td>Recommend</td>
</tr>
<tr>
<td>Verbalize</td>
<td>Select</td>
<td></td>
<td>Resolve</td>
</tr>
<tr>
<td>Word</td>
<td></td>
<td></td>
<td>Select</td>
</tr>
<tr>
<td>Write</td>
<td></td>
<td></td>
<td>Suggest</td>
</tr>
</tbody>
</table>
Action of the conditions that will ordinarily be present in the situation and that are, in fact, directly associated with the desired behavior. The conditions are the environmental factors surrounding the behavior or the resources the learner must use in performing.

The environment encompasses such elements as climatic or geographic conditions—for example, temperature, humidity, light, location, terrain, distances, time of day, and presence of precipitation. Resources include hardware and software, such as tools, equipment, references, and work aids, and the critical element of supervision or assistance received during the performance.

To measure up, the conditions portion of the statement of the objective must:

- Specify exactly what trainees will be given or provided when they demonstrate the behavior.
- Specify restrictions or limitations imposed (if any).
- Identify the tools, equipment, and clothing used (where applicable).
- List the reference and job aids to be used (if any).
- Describe special physical or environmental conditions (if applicable).

Here is an example of a poorly stated condition.

> Given an operable radio receiver power supply and appropriate tools, the trainee must be able to calculate resistance, current, and voltage at selected points in the circuit of a superheterodyne radio receiver.

Examination of this statement reveals that the trainee is expected to do something, with particular end products desired, and in relation to a specific item of equipment. However, the statement leaves many unanswered questions. Is the trainee to perform these calculations with or without references? With or without formulas? Will the calculations be made with test equipment on an actual circuit, or will they be merely paper-and-pencil calculations? If a circuit is involved, will the condition of the circuit be static or dynamic? What are appropriate tools? These questions indicate that the statement of conditions must be amplified. The following rewritten statement serves the purpose much more effectively:

> Given an operational superheterodyne receiver (preadjusted to represent variable circuit conditions), a power supply, a standard set of tools to include a voltmeter and an ammeter, and a handout containing Ohm's law and resistor color codes, the trainee must be able to calculate resistance, current, and voltage at selected points in a superheterodyne circuit.

Another example is:

> The trainee must be able to list in writing the ten basic components of the radio receiver R-390/URR.

Must the trainee provide this information from memory, or will he or she be able to use notes, a chart, or a technical manual? The statement is not clear because here the conditions have not been specified. Consider these improved statements:

From memory, the trainee must be able to list in writing the five technical characteristics of the radio receiver R-390/URR.

Or:
Writing Training Objectives

When shown a radio receiver R-3902URR, the trainee will be able to identify by name each of its 20 operational controls without the aid of notes or references.

Or,

Given a properly functioning radio receiver R-3902URR and a set of operating instructions, the trainee must be able to tune to any specified frequency within the receiver's range.

Other examples of acceptable statements of conditions are:
- Given a 1:25,000 scale map, a compass, and a protractor.
- Given access to IBM 360/40 computer runs.
- Given a standard tool kit, a multimeter, and schematics.
- Given a field compass and a specified magnetic azimuth, and placed on a surveyed course.
- Given standard reference 3-69.
- Given an electronic scope and standard test kit.
- Given a fluctuating temperature range of 60°F to 105°F.
- Given an altitude of 2,000 feet, mean atmospheric pressure of...
- Under continuous supervision.
- Without supervision.
- Under dirt roads or open fields, under dry, wet, icy, or snowy conditions.
- In a prone position.
- In temperatures from -35°F to -115°F.

Step 3. State the criterion of acceptable performance. When the required behavior and conditions of performance have been specified, the ability of the objective to communicate can be increased by stating how well the trainee must be able to perform. This is done by defining the criterion or standard of acceptable performance. The criterion consists of words that describe minimum acceptable performance, set a time limit where appropriate, or define quality or quantity standards for the work product or service produced. To be completely usable, criterion statements must:

- Be realistic and attainable.
- Be relevant to the job or task.
- Specify clearly the minimum acceptable level of achievement.
- Avoid the use of imprecise words such as "effective," "acceptable," "proper," and "average."
- Be measurable.

Here is an example of a statement of objectives without a properly stated criterion:

From memory, the trainee must be able to list and define the technical characteristics of the radio receiver R-3902URR.

What is acceptable performance here? How many technical characteristics are there? How many must the trainee list and define? Is the adequacy or accuracy of the definitions checked? The objective as stated does not answer these questions. Consider these improved statements:
From memory, the trainee must be able to list in writing four of the five technical characteristics of the radio receiver R-390/URR and define these characteristics as set forth in pages 5 and 6 of TM.

Or:

When shown a radio receiver R-390/URR, from memory the trainee must be able to identify orally, by name, each of the 26 operational controls within five minutes and with complete accuracy. Nomenclature used must conform with standard terms used in the operating manual.

Note that the trainee must be able to identify all 26 controls, within 5 minutes, and with complete accuracy. No interpretation is needed to identify the exact standard required.

Here is another example:

The trainee must have a working knowledge of resistor color coding.

What must the trainee "know" about resistor color coding? How can acceptable performance be determined? This objective leaves many unanswered questions. Consider this revised statement:

Given a schematic diagram of a 5-resistor series-parallel circuit with the values of the resistors marked, an assortment of 15 resistors, including 5 with values corresponding to those on the diagram, a circuit board, and wiring, the trainee must be able to select the correct resistors and construct a circuit electrically equivalent to the diagrammed circuit within a time limit of 10 minutes.

In this example, the criterion is clearly specified.

Here is still another example:

The trainee must be able to use an ammeter and a voltmeter to determine capacitive reactance and capacitance.

Here, the behavior is clear, but the conditions and criterion are not specified. An improved statement is:

Given a working two-component series RC circuit connected to a variable frequency source, an ammeter, a voltmeter, a slide rule, and pencil and paper, the trainee must be able to determine the capacitive reactance and capacitance to two significant figures and within 5 percent of preestablished values within 5 minutes. The values of the resistor and capacitance in the circuit will be illegible, but the settings of the power source will be visible.

Note that in this example both a quality and a time criterion are specified.

Other examples of acceptable statements of criteria are:

- Arrive at the destination within half an hour of the scheduled time
- Aim must be correct within 1 degree
- Within 2 minutes
- Without error
- 100 percent correct
- At least nine out of ten
- Each of the five principles
- All of the following
Writing Training Objectives

To a tolerance of . . . . . . . .
The exact techniques of . . . . .
Accurate to the nearest tenth . . .
Within ±1 degrees . . . .
Within 1,600 meters . . . .
To conform to a template . . .
In accordance with procedures defined in . . .
To the standards defined in . . .
Accurate to two significant figures . . .

Format and Procedures

Although by far the most common method of writing behavioral objectives is to combine the three components into a single sentence or paragraph, experience has convincingly demonstrated the desirability of physically separating the behavior, the condition, and the criterion. This formal permits the writer to approach the task of drafting an objective one part at a time, ensures that all three parts are included, and simplifies the process of reviewing statements of objectives. Therefore, whether the objective is written for a job, duty, task, element, or supporting skill, a format similar to that used to state objectives at the beginning of each chapter of this book should be used.

Behavior: The trainee must be able to . . . . . . . .
Conditions: Given: . . . . . . . . .
Criterion: To the standards defined in . . . . . . .

Performance objectives should be drafted on a form similar to the sample shown in Figure 9-2. From the final priority list of critical skills, a separate performance objective workcard should be prepared for each job duty, task, and element. The procedures for completing these cards is as follows:

Figure 9-2. Performance objective workcard.

Major duty: Task: of elements
Major references: Behavior Condition Criterion

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Condition</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Enter on each card the title of the major duty, the title of the task, and the number of elements—for example, “1 of 3 elements.”

2. Using the steps defined under “Writing Performance-Centered Objectives,” make separate entries to describe the behavior, conditions, and criterion of performance for each job duty, task, and element.

3. Enter under “Major references” the primary source document(s) related to the duty, task, or element.

CHECKLIST FOR REVIEWING PERFORMANCE OBJECTIVES

Draft objectives should be subjected to a final, rigid check prior to their publication, distribution, and use. The items listed below are some of the most important standards to apply in checking the adequacy of performance-centered objectives.

**General**
- Are the statements free from grammatical, spelling, and typographical errors?
- Has the writer avoided the use of unfamiliar words?
- Is the sentence structure clear, concise, simple, and straightforward?
- Is the use of punctuation, abbreviations, and hyphenation correct and uniform?
- Do the statements avoid ambiguity?
- Is extraneous or confusing information excluded?

**Behavior**
- Does the statement clearly and precisely describe what the trainees will be doing when they demonstrate what they have learned?
- Does the statement avoid the use of “loaded words”?
- Does the statement describe a complete action?
- Does the statement begin with a verb?
- Does the statement describe a meaningful unit of performance?
- Is the behavior clearly relevant to the job or task?

**Conditions**
- Does the statement clearly and completely describe the conditions under which the trainees must demonstrate the required behavior?
- Does the statement begin with the word Given?
- Does the statement identify what the trainee will be given to do the job or task (tools, equipment, job aids, or materials)?
- Does the statement clearly identify what tools, equipment, job aids, or materials the trainee will be denied (when this is pertinent)?
- Does the statement describe the physical environment (space, climatic conditions, lighting conditions, and the like) when these are significant?
- Does the statement describe the assistance the trainees will receive (if any)?
Writing Training Objectives

☐ Does the statement describe the amount and kind of supervision (if any) the trainee will receive during job performance?

Criterion

☐ Does the statement clearly describe how well the trainee must perform?

☐ Is the minimum level for acceptable performance clearly defined?

☐ Is the quality of the work products or services defined in terms of standards of accuracy, completeness, format, sequence, clarity, neatness, tolerances, or number of errors permitted?

☐ Is the quantity of the work products or services defined in terms of the number of units to be completed per unit of time or in terms of the total number of units required?

☐ Are time standards clearly defined in terms of duration of performance, speed of performance, or total time allowed for performance?

☐ Are the standards realistic and attainable?

☐ Are the standards relevant to the job or task?

☐ Are the standards measurable?

☐ Do the standards avoid the use of such imprecise words as "effective," "acceptable," "proper," and "average"?

For Further Reading and Viewing


Education and the economy are interdependent. Education is crucial for economic development, as it provides the necessary skills and knowledge for individuals to participate in the workforce and drive innovation. On the other hand, economic growth can provide the resources and support needed for quality education systems. It is essential to foster a strong partnership between education and economic development to ensure sustainable growth and prosperity. Combined, they enable societies to adapt to changes, promote social cohesion, and enhance global competitiveness. This relationship highlights how education is a powerful tool for economic advancement and how economic conditions can significantly impact educational opportunities and outcomes.
Learning in Formal Settings

Numerous writers have described the vast array of formal settings that provide learning opportunities for adults. (See Darkenwald and Merriam, 1982; Brookfield, 1986; Merriam and Cunningham, 1989; Boone, Shearon, and White, 1980; Craig, 1987.) For some of these institutions adult learning is the primary mission, while for others it is seen as one way to fulfill their institution's goals. One of the most useful typologies of organizations has been given by Darkenwald and Merriam (1982), who outline four categories of organizations that provide learning opportunities for adults: independent adult education organizations (such as proprietary schools and community-based agencies); educational institutions (such as public schools, colleges, and universities); quasi-educational organizations (such as museums and community organizations); and noneducational organizations (such as business and industry, the armed forces, and correctional facilities). The first category, independent adult education organizations, "played a larger role in the education of the public [in the past] than such organizations do today," they say (p. 155), whereas noneducational organizations are increasingly becoming involved in the education of adults (Carnevale and Gainer, 1989). In fact, as demonstrated by a recent study, "employers deliver learning to more people than does the entire U.S. higher-education system" (Carnevale, 1989, p. 27).

Despite the variety of descriptions of adult learning in different types of settings, few have discussed the effect that these settings, both as distinct units and collectively, have on that learning. This chapter begins by considering the process of learning in formal settings. Following this review the discussion shifts to specific organizational factors—people, structure, and culture—that affect this process. We then demonstrate how these factors—especially the structural components, such as time, standard operating procedures, and facilities, depending on their configuration—can either enhance or impede learning.

The Process

Adult learning in most formal settings occurs under the direction of an educator or trainer who takes on the role of mediating
Learning in Adulthood

organization possesses a distinctive culture that determines whether or not it can respond quickly to the needs of its customers—in this case, adult learners.

The three major factors that affect the learning climate of an organization—people, structure, and culture—are not independent of each other but interact to a greater or lesser extent dependent upon circumstances (Lovell, 1980, p. 173). One person, for example, might elect to enroll in a graduate program within commuting distance versus relocating to the graduate school of her choice. This decision may mean that the structural and cultural factors of that program may not meet all her needs; therefore she must either be able to change parts of the system or adapt her own learning needs and style to those of the institution. If a large number of students have learning needs that differ from what is traditionally offered by the school, the institution may eventually have to alter that program or even the institution itself. This has happened in a number of institutions of higher education as part-time adult students have become the norm on some campuses. (See Appx., 1988; Schlossberg, Lynch, and Chickering, 1989.) Although all three factors are important in understanding the learning climate of an organization, the structural variables and the people variables have received the most attention in the literature. These factors will be explored further in light of whether they enhance or inhibit learning in formal settings.

Factors That Enhance or Inhibit Learning

Many educators of adults believe that these organizational factors—people, structure, and culture—can either facilitate or deter learning. This belief has been succinctly stated by Knowles (1980): “The quality of learning that takes place in an organization is affected by the kind of organization it is. This is to say that an organization is not simply an instrumentality for providing organized learning activities to adults; it also provides an environment that either facilitates or inhibits learning” (p. 66).

As we shall see in the following sections, some of our intuitive notions about the power of organizational factors have been confirmed, though in-depth exploration of these factors has been limited (Williams and Willie, 1990).

Enhancing Adult Learning. Facilitation of learning by organizations has most often been addressed in terms of the physical environment and the emotional or psychological climate—primarily the structural and people factors. (See Knowles, 1970, 1980; Kidd, 1973; Munson, 1984; Finkel, 1984, 1986; Laird, 1985.) Kidd (1973), for example, advocates an environment that is welcoming and supporting, a place where “rules are made and administered for the welfare of the learner and not the ease and comfort of the personnel in the educational institution” (p. 235). Finkel (1984, 1986), by contrast, specifically addresses how physical facilities should be designed for higher levels of adult learning. Knowles’s (1980) description of an educative environment is one of the more encompassing ones. Grounded in the democratic philosophy, Knowles outlines four basic characteristics of educative environments for all types of organizations attempting to help people learn: (1) respect for personality; (2) participation in decision making; (3) freedom of expression and availability of information; and (4) mutuality of responsibility in defining goals, planning and conducting activities, and evaluating (1980, p. 67). Knowles also suggests that an organization must be innovative in addition to being democratic if it is to provide a climate conducive to learning. Few data-based research studies have investigated this notion of educational climate as a source for the enhancement of adult learning in formal settings. Darkenwald and colleagues (Darkenwald, 1987, 1989; Darkenwald and Valentine, 1986; Darkenwald and Gavin, 1987; Beer and Darkenwald, 1989), for example, grounded in social environment theory, have conceptualized the major dimensions of a positive or growth-enhancing environment for adults involved in formal classroom learning. “Classroom” is interpreted by these researchers in the broadest sense to include such activities as workshops, conferences, and training programs as well as the more traditional
An alternative approach to describing a positive educational environment is to explain how this environment can be established. This is the approach taken by Apps (1980) and Schlossberg, Lynch, and Chickering (1989). Although both studies address changing higher education environments for adult learners, the key elements of their approaches may apply to all institutions. Apps (1980) recommends the transformational process as one way institutions can become more responsive to adult learners: "The transformational mind set includes a way of looking at situations, at questions, at problems, at solutions, that does not stop with the obvious. We constantly ask questions such as the following: What are the assumptions and values underlying a particular statement? Are there additional alternatives we can consider? Is there another way of doing things, perhaps a way that does not immediately come to mind? Are we asking the right questions?" (p. 55). The process is built on the premise that what we assume about something or someone influences our perceptions and in turn our actions toward that something or someone" (p. 56). We need not be aware of these assumptions for them to influence our work with adult learners.

The transformational process (Apps, 1973, 1980) includes five phases: (1) developing awareness — recognizing that something is wrong or different; (2) exploring alternatives — searching for new ideas from other institutions and acknowledging that change is needed; (3) making a transition — leaving the old approaches behind (or dramatically changed) and adopting a new way; (4) achieving integration — putting the pieces from the transition phase back together, and (5) taking action — putting the new ideas into operation. This process therefore allows for movement, dynamic and fluid, back and forth and between and among the phases, with the possibility that more than one phase may occur simultaneously. The process can be applied at the instructional, program, or institutional level. For example, at any of these levels educators could examine their assumptions about adults as learners, the basic purposes of adults learning in their organization, and the teaching and learning approaches used (Apps, 1985).
Learning in Adulthood

Learning in Formal Settings

primarily structural in nature) within these factors were somewhat similar. Again, the institutional variables were subdivided under two factors: lack of course relevance ("the course available did not seem interesting"; the courses available were of poor quality") and time constraints ("the course was scheduled at an inconvenient time"; "the course was offered at an inconvenient location"). These two variables (inconvenient scheduling and location) were assigned the greatest importance by the respondents, whereas those included in the factor "lack of course relevance" were given a moderate to high degree of importance.

Because of the different findings yielded by this study of the general adult population and the earlier study of health professionals, the authors suggest that "modified or specially developed DVS instruments are needed to measure deterrents for distinctive subpopulations" (p. 185). They caution that further theory building with regard to deterrents to participation requires rigorous, empirical analysis of the deterrent construct with different populations. Darkenwald (1989) has in fact furthered this work by replicating in Britain the 1985 study he conducted with Valentine. He concludes: "The factors generated from both the U.S. and British data were comparable and represented clearly defined, conceptually meaningful commonalities of the deterrent construct" (p. 130). Therefore, the institutional barriers that inhibit participation of adults in formal learning activities (time constraints and lack of course relevance) were essentially the same in both the United States and Britain.

As noted earlier, Goldin and Thomas (1981) examined the organizational factors in one specific institution—prisons—that appear to have seriously hampered adult learning programs offered by that institution. They derived their data from unstructured unstructured interviews with prisoners, instructors, and prison and educational officials, as well as from field notes and documents from both the host and delivering institutions. With regard to institutional barriers, Goldin and Thomas discovered some that are unique to the prison setting, such as "lockdowns" (when all prisoners are confined to their cells). Yet most of the other barriers, all structural in nature, mirrored those outlined by Cross and others: poor facilities, lack of access to information, sched-
Learning as a Self-Directed Activity

In this section, we explore the role of the learner in the process of learning. We begin by discussing the concept of self-directed learning, which refers to the process of learning in which the learner takes control of the learning process and is responsible for their own learning outcomes. This involves setting learning goals, selecting learning materials, and evaluating their own progress.

According to the results of numerous studies, self-directed learners tend to have higher levels of motivation, greater engagement with the material, and more effective learning outcomes compared to learners who rely on external guidance. Self-directed learners are also more likely to maintain long-term interest in the subject matter and to transfer new knowledge to real-world situations.

In summary, self-directed learning is an essential component of effective learning. By taking responsibility for their own learning, learners can develop critical thinking skills, improve problem-solving abilities, and become lifelong learners.
This chapter traces the development of the concept of intelligence, highlighting the theories that have helped to clarify the nature of adult intelligence. In general, the movement has been from viewing intelligence as a single general trait to a more multifaceted construct. Also explored are the means of assessing intelligence in adulthood and the shortcomings of the present measurement tools. The relationship of intelligence to memory, information processing, and cognition is complex that researchers have yet to agree on their definition of the concepts let alone how the various processes may interact.

Chapter Nine focuses on memory and cognition. After reviewing how memory works, we turn to the different components of memory, short-term and long-term memory, and how age may or may not affect an adult's ability to remember. Other important aspects of cognition are schema theory, how prior knowledge and experience affect learning, and the differences between cognitive style and learning style. Although the major work in cognition has been done with children and computers, many educators have generalized the findings to include learning in adulthood without the necessary verification studies. Therefore, the focus of this chapter is on work primarily oriented toward adult learning. In exploring this material, the importance of the social and cultural context of learning emerges as a major variable that affects cognition in adulthood.

The last chapter in Part Three explores cognitive development in adulthood—that is, how adults' thinking patterns change over time. Beginning with a discussion of the pioneering work of Piaget, we then present alternative models of adult cognitive development. Dialectical thinking, characterized by the acceptance of alternative truths and ways of thinking about similar phenomena in adult life, is explored as one of the major schemas of mature adult thought. Among the works discussed are those of Riegel, Batschelet, Finke, and Labovitch-Vieb. Finally, we consider one of the hallmarks of adult thought: wisdom.

Learning, so central to human behavior yet so elusive to understanding, has fascinated thinkers as far back as Plato and Aristotle. Indeed, the views of these two men underpin much modern-day research on learning conducted by psychologists and educators. The fact that so many people have thought about, investigated, and written about the process of learning over the years suggests the complexity of the topic. Learning defies easy definition and simple theorizing. This chapter reviews some of the major ways learning has been studied and delineates the contributions these orientations have made to our understanding of learning in adulthood.

Originally, learning was in the purview of philosophical investigations into the nature of knowledge, the human mind, and what it means to know. As mentioned above, Plato and Aristotle's views about how we know something underlie contemporary learning theory. Plato believed that the physical objects in our everyday world have corresponding abstract forms that we can come to know "by reflecting on the contents of one's mind" (Hergenhahn, 1980, p. 31). Aristotle, on the other hand, believed that all knowledge comes through the senses, these sense impressions can be pondered upon "to discover the lawfulness that runs through them" (p. 33). Plato's "rationalism" can be seen in Gestalt and cognitive psychology; Aristotle's "empiricism" is particularly evident in early behavioral psychology. Later philosophers presented variations on these two basic posi-
tions, ranging from Descartes’s separation of mind and body to Kant’s notion of innate mental faculties.

It was not until the nineteenth century that the study of the mind, of how people know, and, by extension, of behavior, became “scientifically” investigated. Herogenhohn (1988) writes that Hermann Ebbinghaus’ “emancipating psychology from philosophy by demonstrating that the higher mental processes of learning and memory could be studied experimentally” and that many of his findings on learning and memory published in 1885 are still valid today (p. 42). Another pioneer, Wilhelm Wundt, set up the first psychological laboratory in Leipzig in 1879 and investigated how experience was assimilated “into the knowledge structures one already had” (Di Vea, 1987, p. 206). By the turn of the century, systematic investigations into human learning were well under way in both Europe and North America.

Learning and Learning Theories

Although learning has been defined in a variety of ways, most definitions include the concepts of behavioral change and experience. A common definition from psychologists, especially those who were investigating the phenomena until the 1950s, is that learning is a change in behavior. This definition, however, fails to capture some of the complexities involved—such as whether one needs to perform in order for learning to have occurred or whether all human behavior is learned. The notion of change still underlies most definitions of learning, although it has been modified to include the potential for change. Likewise, the idea that having an experience of some sort, rather than learning as a function of maturation, is important. Thus a reasonable definition of learning would be: “Learning is a relatively permanent change in behavior or in behavioral potentiality that results from experience and cannot be attributed to temporary body states such as those induced by illness, fatigue, or drug” (Herogenhohn, 1988, p. 7). Or stated more simply by Maples and Webster (1960): “Learning can be thought of as a process by which behavior changes as a result of experiences” (p. 1).

The Behaviorist Orientation

Behaviorism is a well-known orientation to learning that encompasses a number of individual theories. Founded by John
I. Watson in the early decades of the twentieth century, behaviorism loosely encompassed the work of such people as Thorndike, Tolman, Guthrie, Hull, and Skinner (Sahakian, 1984). What characterizes these investigators is their unifying assumption about the process of learning: In essence, three basic assumptions are held to be true. First, observable behavior rather than internal thought processes is the focus of study; in particular, learning is manifested by a change in behavior. Second, the environmental shapes one’s behavior; what one learns is determined by the elements in the environment, not by the individual learner. And third, the principles of contiguity (how close in time two events must be for a bond to be formed) and reinforcement (any means of increasing the likelihood that an event will be repeated) are central to explaining the learning process (Grippen and Peters, 1984).

Edward L. Thorndike, a contemporary of Watson, is “perhaps the greatest learning theorist of all time” (Hergenhahn, 1988, p. 55). A prolific researcher and writer, “he did pioneer work not only in learning theory but also in the areas of educational practices, verbal behavior, comparative psychology, intelligence testing, the nature-nurture problem, transfer of training, and the application of quantitative measures to sociopsychological problems” (p. 55). His major contribution to understanding learning has come to be called connectionism, or the S-R theory of learning. Using animals in controlled experiments, Thorndike noted that through repeated trial-and-error learning, certain connections between sensory impressions or stimuli (S) and subsequent behavior or responses (R) are strengthened or weakened by the consequences of behavior. Thorndike formulated three laws of learning to explain his findings. The Law of Effect states that learners will acquire and remember responses that lead to satisfying aftereffects. The Law of Exercise asserts that the repetition of a meaningful connection results in substantial learning. The Law of Readiness notes that if the organism is ready for the connection, learning is enhanced; if not, learning is inhibited (Hergenhahn, 1988). While these laws were modified by Thorndike himself and later researchers, they are nevertheless still applied widely in educational settings.

Thorndike’s connectionism became refined and expanded upon by his contemporaries and by those who followed. Pavlov, for example, working in Russia, added concepts of reinforcement, conditioned stimulus, and extinction to the basic notion of the stimulus-response connection. Guthrie stated that one law of learning based on contiguity is all that is needed to make learning comprehensible: “Whatever you do in the presence of a stimulus, you do again when that stimulus is re-presented” (Grippen and Peters, 1984, p. 61). Tolman introduced the notion that learning occurs in relation to purpose and that there are intervening variables between a stimulus and a response. Hull expanded Tolman’s concept of intervening variables and proposed that a response depends on such factors as habit, strength, drive, and motivation. Important in the work of these researchers was (see Hergenhahn, 1988, or Sahakian, 1984, for detailed discussions), behaviorism was most developed as a theory of learning by B. F. Skinner.

Skinner's major contribution to understanding learning is known as operant conditioning. Simply stated, operant conditioning means “reinforce what you want the individual to do again; ignore what you want the individual to stop doing” (Grippen and Peters, 1984, p. 65). Reinforcement is essential to understanding operant conditioning. If behavior is reinforced or rewarded, the response is more likely to occur again under similar conditions. Behavior that is not reinforced is likely to become less frequent and may even disappear. Within this framework, even something as complex as personality can be explained by operant conditioning. Personality, according to Skinner, is a “repertoire of behavior imported by an organized set of contingencies” — in effect, a personal history of reinforcements (1974, p. 149). Skinner's research concentrated on positive and negative reinforcement schedules, the timing of reinforcements, and avoidance behavior. In essence, his work indicates that since all behavior is learned, behavior can be determined by arranging the contingencies of reinforcement in the learner's immediate environment. Behaviorists since Skinner have taken into account certain aspects of the human organism but still emphasize that it is environment which controls behavior, "not some mechanism within the individual" (Grippen and Peters, 1984, p. 71).
Learning in childhood

The behaviorist orientation to learning underlies much educational practice, including adult learning. Skinner in particular has addressed the application of his theory to educational issues. As he sees it, the ultimate goal of education is to bring about behavior that will ensure survival of the human species, societies, and individuals (Skinner, 1971). The teacher's role is to design an environment that elicits desired behavior toward meeting these goals and to extinguish behavior that is not desirable. Several educational practices can be traced to this type of learning. The systematic design of instruction, behavioral objectives, notions of the instructor's accountability, programmed instruction, computer-assisted instruction, competency-based education, and so on are solidly grounded in behavioral learning theory. Adult vocational and skills training—in which the learning task is broken into segments or tasks and there is a 'correct response,' which is rewarded—in particular draws from behaviorism (Gross, 1981, p. 233). Thus the behavioral orientation to learning has had a profound effect on our educational system. It has also been challenged by theorists from two radically different perspectives: cognitivism and humanism.

The Cognitive Orientation

The earliest challenge to the behaviorists came in a publication in 1929 by I. Euler, a Gestalt psychologist. He criticized behaviorists for being too particularistic, too concerned with single events and actions, and too dependent on overt behavior to explain learning. Gestalt (a German word meaning ‘pattern’ or ‘shape’) psychologists proposed looking at the whole rather than its parts, at patterns rather than isolated events. Through the research of Gestaltists Wertheimer, Kohler, and L. Lewin (Hergenhahn, 1988), Gestalt views of learning rivaled behaviorism by the mid-twentieth century. These views have been incorporated into what have come to be labeled as cognitive or information-processing learning theories.

Perception, insight, and meaning are key contributions to cognitivism from Gestalt learning theorists. According to cognitivists, "The human mind is not simply a passive exchange
terminal system where the stimuli arrive and the appropriate response leaves. Rather, the thinking person interprets sensations and gives meaning to the events that impinge upon his consciousness" (Grippen and Peters, 1981, p. 76). Learning involves the reorganization of experiences in order to make sense of stimuli from the environment. Sometimes this sense comes through flashes of insight. Hergenhahn (1988, p. 252) summarizes the learning process according to Gestalt psychology: 'Learning, to the Gestaltists, is a cognitive phenomenon. The organism comes to see the solution after pondering a problem. The learner thinks about all the ingredients necessary to solve a problem and puts them together (cognitively) first one way and then another until the problem is solved. When the solution comes, it comes suddenly, that is, the organism gains an insight into the solution of a problem. The problem can exist in only two states: (a) unsolved and (b) solved; there is no state of partial solution in between.' A major difference between Gestaltists and behaviorists, therefore, is the locus of control over the learning activity. For Gestaltists it lies with the individual learner; for behaviorists it lies with the environment. This shift to the individual—and in particular to the learner's mental processes—is characteristic of cognitivist-oriented learning theories.

A cognitive psychologist who clarified the focus on internal cognitive processes was Jean Piaget (1966). Influenced by both the behaviorist and Gestalt schools of thought, Piaget proposed that one's internal cognitive structure changed partly as a result of maturation changes in the nervous system and partly as a result of the organism interacting with the environment and being exposed to an increasing number of experiences. His four-stage theory of cognitive development and its implications for adult learning are discussed more fully in Chapter Nine.

Currently, a number of research and theory-building efforts take as their starting point the mental processes involved in learning. These efforts include information processing theories, work on memory and metacognition, theories of transfer, mathematical learning theory models, the study of expertise, computer simulations, and artificial intelligence. Converging with cognitivist learning theory are theories of instruction that
attempt to unite what is known about learning with the best way to facilitate its occurrence. Ausubel, Bruner, and Gagne are good examples of how the understanding of mental processes can be linked to instruction.

Ausubel (1967) distinguishes between meaningful learning androte learning. He suggests that learning is meaningful only when it can be related to concepts which already exist in a person's cognitive structure. Rote learning, on the other hand, does not become linked to a person's cognitive structure and hence is easily forgotten. Also unique is Ausubel's notion of "reception" learning. New knowledge is processed by the learner "only to the extent that it is relevant and appropriately relevant concepts are already available in the cognitive structure to serve as subsuming role or to provide definitional anchorage" (1967, p. 222). He suggests the use of "advance organizers" to prepare a person for new learning (1968). Ausubel's work can be seen as an antecedent to current research on schema theory wherein schemata - structures that organize the learner's world-view -- in turn determine how new experiences are processed (La Vesta, 1987; Greeno, 1980).

Ausubel emphasizes the importance of the learner's cognitive structure in new learning. Bruner, whose views are often contrasted with Ausubel's, emphasizes learning through discovery. Discovery is "in its essence a matter of rearranging or transforming evidence in such a way that one is enabled to go beyond the evidence to see hidden in additional new insights" (Bruner, 1965, pp. 607-608). According to Knowles (1984), Bruner's instructional theory is based on a theory about the act of learning that involves "three almost simultaneous processes: (1) acquisition of new information; (2) transformation, or the process of manipulating knowledge to make it fit new tasks; and (3) evaluation, or checking whether the way we have manipulated information is adequate to the task" (p. 25).

Linking the acquisition and processing of knowledge to instruction has probably been most thoroughly developed by Gagne and Briggs (1979). They contend that there are eight different types of knowledge, each of which has appropriate instructional procedures. The eight types of learning are signal
Humanist theories that deal with the mental processing of information, humanist theories consider learning from the perspective of the human potential for growth. The shift to the study of the affective as well as cognitive dimensions of learning was in part informed by Freud's psychoanalytic approach to human behavior. Though most would not label Freud a learning theorist, aspects of his psychology such as the influence of the subconscious mind on behavior, as well as the concepts of anxiety, repression, defense mechanism, drives, and transference, have found their way into some learning theories. Sahakian (1984), in fact, makes the case for psychoanalytic therapy as a type of learning theory.

Despite Freud's focus on personality, humanists reject the view of human nature implied by both behavioralists and Freudian psychologists. Identifying their theory as a "third force," humanists refuse to accept the notion that behavior is predetermined by either the environment or one's subconscious. Rather, human beings can control their own destiny, people are inherently good and will strive for a better world; people are free to act, and behavior is the consequence of human choice, people possess unlimited potential for growth and development (Rogers, 1983; Maslow, 1970). From a learning theory perspective, humanism emphasizes a person's perceptions that are centered in experience, as well as the freedom and responsibility to become what one is capable of becoming. These tenets underlie much of adult learning theory that stresses the self-directedness of adults and the value of experience in the learning process. Two psychologists who have contributed the most to our understanding of learning from this perspective are Abraham Maslow and Carl Rogers.

Maslow (1970), considered to be the founder of humanistic psychology, proposed a theory of human motivation based on a hierarchy of needs. At the lowest level of the hierarchy are physiological needs such as hunger and thirst, which must be attended to before one can deal with safety needs—those dealing with security and protection. The remaining levels involve belonging and love, self-esteem, and, finally, the need for self-actualization. This need can be seen in a person's desire to become all that he or she is capable of becoming. The motivate...

Key Theories of Learning

Learning is intrinsic, it emanates from the learner. For Maslow self-actualization is the goal of learning and educators should strive to bring this about. As Sahakian (1984) notes, learning from Maslow's point of view is itself "a form of self-actualization. Among the growth motivations was found the need for cognition, the desire to know and to understand. Learning is not only a form of psychotherapy . . . , but learning contributes to psychological health" (p. 438). While self-actualization is the primary goal of learning, there are other goals (p. 439):

1. The discovery of a vocation or destiny
2. The knowledge or acquisition of a set of values
3. The realization of life as precious
4. The acquisition of peak experiences
5. A sense of accomplishment
6. The satisfaction of psychological needs
7. The refreshing of consciousness to an awareness of the beauty and wonder of life
8. The control of impulses
9. The grappling with the critical existential problems of life
10. Learning to choose judiciously

Another major figure writing from a humanist orientation is Carl Rogers. His book *Freedom to Learn for the 80's* (1983) lays out his theory of learning, which he sees as a similar process in both therapy and education. In fact, his "client-centered therapy" is often equated with student-centered learning. In both education and therapy, Rogers is concerned with significant learning that leads to personal growth and development. Such learning has the following characteristics (p. 20):

1. Personal involvement—the affective and cognitive aspects of a person should be involved in the learning event.
2. Self-initiated—a sense of discovery must come from within.
3. Pervasive—the learning makes a difference in the behavior, the attitudes, perhaps even the personality of the learner.
4. Evaluated by the learner—the learner can best determine whether an experience is meeting a need.
5. Essence is meaning: when experiential learning takes place, its meaning to the learner becomes incorporated into the total experience.

Quite clearly, Roger's principles of significant learning and Maslow's views have been integrated into much of adult learning. Knowles' theory of andragogy (see Chapter Thirteen) and much of the research and writing on self-directed learning (see Chapters Three and Eleven) are grounded in humanistic learning theories. Moreover, humanistic theories have the potential for designing a true learning society, since "there is a natural tendency for people to learn and that learning will flourish if nourishing, encouraging environments are provided" (Gross, 1981, p. 228).

A Social Learning Orientation

The fourth and final set of learning theories to be discussed in this chapter draw from, yet differ significantly from, the behaviorist, cognitive, and humanist orientations. Quite simply, social learning theory posits that people learn from observing other people. By definition, such observations take place in a social setting—hence the label "observational" or "social" learning (Lefrançois, 1982). Just how the learning occurs has been the subject of several investigations.

Miller and Dollard in the 1940s were the first to explore how people learn through observation. Drawing from stimulus-response and reinforcement theory, they argued that people do not learn from observation alone—rather, what has been observed must be imitated and reinforced. "If imitative responses were not made and reinforced, no learning would take place. For them, imitative learning was the result of observation, overt responding, and reinforcement" (Hergenhahn, 1988, p. 321). Their ideas were of course totally congruent with the behaviorist orientation to learning. Their main contribution was to demonstrate that "social-personality phenomena could be described and explained with the more objective and reliable concepts of a learning theory" (Flavell, 1980, p. 412). Not until the 1960s...

However, with the work of Bandura, did social learning theory break from a purely behaviorist orientation.

Bandura focused more on the cognitive processes involved in the observation than on the subsequent behavior. Central to his theory is the separation of observation from the act of imitation. One can learn from observation, he maintains, without having to imitate what was observed (Hergenhahn, 1988). In fact, the learning can be vicarious: "Virtually all learning phenomena resulting from direct experiences can occur on a vicarious basis through observation of other people's behavior and its consequences for the observer" (Bandura, 1976, p. 392). In addition to being cognitive and vicarious, Bandura's observational learning is characterized by the concept of self-regulation. He contends that "persons can regulate their own behavior to some extent by visualizing self-generated consequences" (p. 392).

Observational learning is influenced by the four processes of attention, retention or memory, behavioral rehearsal, and motivation (Hergenhahn, 1988). Before something can be learned, the model must be attended to; some models are more likely than others to be attended to such that thought to be competent, powerful, attractive, and so on. Information from an observation then needs to be retained or stored for future use: "Symbols retained from modeling experience act as a template with which one's actions are compared. During this rehearsal process individuals observe their own behavior and compare it to their cognitive representation of the modeled experience" (Hergenhahn, 1988, p. 327). Finally, the modeled behavior is stored until a person is motivated to act upon it.

Bandura's theory has particular relevance to adult learning in that it accounts for both the learner and the environment in which he or she operates. Behavior is a function of the interaction of the person with the environment. This is a reciprocal concept in that people influence their environment, which in turn influences the way they behave. This three-way interactive model is pictured by Bandura as a triangle (Bandura, 1986; Stadding, 1984). Learning is set solidly within a social context.

The importance of the social situation in learning has been...
Learning I

Further developed by Rotter (1954), whose theory includes strands from behaviorism, cognitivism, and personality theory. Rotter's theory is framed by seven propositions and attendant corollaries that delineate relationships among the concepts of behavior, personality, experience, and environment. Rotter's theory assumes "that much of human behavior takes place in a meaningful environment and is acquired through social interactions with other people" (Phares, 1980, p. 406). Key to understanding "which behavior (once acquired) in the individual's repertoire will occur in a given situation" (p. 407) are the concepts of expectancy and reinforcement. Expectancy is the likelihood that a particular reinforcement will occur as the result of specific behavior: "The way in which the person constructs or psychologically defines the situation will affect the values of both reinforcement and expectancy thereby influencing the potential for any given behavior to occur" (p. 408). Phares notes that research on the ways in which expectancies "generalize and change" has been a major contribution to our understanding of the learning process (p. 426).

Several useful concepts emerge from social learning theory. For example, the motivation to engage in adult learning activities might be partly explained by Rotter's (1954) notion that "people tend to attribute their successes and failures to internal or external causes. Thus, there appear to be a personality type whose locus of control (Rotter's terminology) is external and another type that is more internally oriented" (Lefrançois, 1982, p. 266). Another connection to adult learning is the importance of context and the learner's interaction with the environment to explain behavior. That is, explanations of learning may need to focus on more than overt behavior, mental processes, or personality. Studying the interaction of all these factors may result in a more comprehensive explanation of how adults learn.

Moreover, Bandura's work on observational learning and modeling provides insights into social role acquisition and the nature of mentoring, a topic recently explored in depth by Palz (1986).

Summary

Learning, a process central to human behavior, has been of interest to philosophers, psychologists, educators, and politicians for centuries. Beginning in the late nineteenth century, the study of learning began to develop as a distinct and unique discipline within psychology. The field of learning theory encompasses a wide range of approaches, each with its own set of assumptions and methods. Key theoretical traditions in learning theory include behaviorism, cognitivism, and social learning theory, each offering unique perspectives on the processes of learning and development.

Key Theorists

While many notable contributions have been made to the field of learning theory, a few prominent figures stand out for their foundational work. Among these are B. F. Skinner, a behaviorist, who emphasized the role of environmental contingencies in shaping behavior. Skinner's principles of reinforcement and operant conditioning have been central to shaping educational practices and instructional design. Another influential figure is Albert Bandura, a social cognitive theorist, who emphasized the role of self-regulation and social learning in the development of human behavior. Bandura's theory of reciprocal determinism highlights the interplay between personal factors, behavior, and environmental factors in the shaping of learning outcomes.

Social learning theory, as proposed by Albert Bandura, has further enriched our understanding of learning by emphasizing the role of modeling and observational learning. This theory posits that learning can occur through the observation of others' actions and the outcomes of those actions, without the necessity of direct personal experience. This has important implications for education, as it suggests that effective learning environments can be created through the provision of role models and the modeling of behaviors that are aligned with desired outcomes.

The impact of learning theory on modern educational practice cannot be overstated. From personalized learning environments that cater to individual differences to the integration of technology in the classroom, the insights from learning theory have been instrumental in shaping pedagogical practices and instructional strategies. The field continues to evolve, with ongoing debates about the best ways to foster learning and the role of technology in education.

In conclusion, the study of learning provides a foundation for understanding how individuals acquire knowledge and skills. It is a field that not only informs teaching and learning practices but also contributes to our broader understanding of human behavior and development. As learning theory continues to advance, it remains a vital area of study that is highly relevant to educators, psychologists, and policymakers alike.
The fourth and final orientation discussed here is social learning. This perspective differs from the other three in its focus on the social setting in which learning occurs. From this perspective learning occurs through the observation of people in one's immediate environment. Furthermore, learning is a function of the interaction of the person, the environment, and the behavior. Variations in behavior under the same circumstances can be explained by idiosyncratic personality traits and their unique interaction with environmental stimuli. Social learning theories contribute to adult learning by highlighting the importance of social context and explicating the processes of modeling and mentoring.
Selecting and Sequencing Content

The emphasis up to this point has been on how the trainees should perform after exposure to the training system. Reference to the content of learning activities per se has been deliberately avoided. Now that the delivery system has been selected and performance has been clearly defined, the knowledge, skills, and values that support each performance objective, and the sequence in which they should be developed, can be identified. Essentially, the job is twofold: first, to examine each performance objective and identify the specific tasks, concepts, principles, skills, and operations involved in each task; and second, to arrange the teaching points and learning activities in the most efficient way for learning.

This chapter describes these steps. Although the processes of selecting and sequencing content are closely related and intertwined, for purposes of clarity each process is described and discussed separately.

Upon completing this chapter, the reader will be able to perform as follows:

**Behavior**
- Select the facts, concepts, principles, skills, and operations required by trainees to perform a specific job.

**Conditions**
- Given no analysis reports, including training objectives in performance terms, guides for the identification of knowledge, skill, and values, assistance in confronting problems, and clinical assistance.

**Criterion**
- In accordance with the standards defined in this chapter.

**Behavior**
- Place the content in the proper sequence for efficient learning.

**Conditions**
- Given sequencing guides and a breakdown of the training system in the form of performance objectives, workcards, and detailed content outlines, the assistance of subject-matter experts, and clinical help.

**Criterion**
- In accordance with the standards prescribed in this chapter.
Selecting and Sequencing Content

Content Selection

The term content refers to subject matter, teaching points, or learnings that enable the trainee to perform the tasks, duties, and jobs that are the terminal objectives of training and development systems. Essentially, knowledge, habits, elements of skill, and emotionalized controls comprise content.

1. Knowledge consists of facts, concepts, principles, meanings, understandings, and ideas. Examples are nomenclature and terminology, such as those relating to equipment and processes; symbols, such as map symbols, and mathematical or scientific notation; scientific principles, such as those involved in electronics repair; concepts, such as supervisory authority and responsibility; understandings, such as safety precautions, step-by-step procedures, and enterprise rules.

2. Habits are acquired tendencies to act in a certain way when certain conditions are present in the environment. Examples include observing safety precautions and showing concern for the feelings of subordinates.

3. Skills are behaviors that require some degree of facility in the performance of part or all of a complex act. Speed and accuracy are usually required. Skills may be either mental or motor. Examples are public speaking, technical writing, typing, equipment operation, soldering, troubleshooting, repairing, communicating, leading, and problem solving.

4. Emotionalized controls are attitudes, ideals, interests, and appreciations that influence or control other types of behavior.

a. An attitude is a person's predisposition or sentiment toward other persons, objects, institutions, practices, or ideas. Examples are respect, obedience, enthusiasm, receptiveness to change, and reverence.

b. An ideal is a standard, often of perfection, related to people, traits, objects, or ideas that is accepted by an individual or group. Examples are standards of management, leadership, and craftsmanship.

c. An interest is an acquired concern for or about objects, people, processes, or ideas. A degree of excitement of feeling usually accompanies attention to or perception of the object of interest.

d. An appreciation is a recognition and comprehension of value in some person, group, trait, object, idea, or process. Examples are appreciation of work, art, modern art, national traditions, or democratic institutions.

Because habits and emotionalized controls are more likely to be concomitant learnings, rather than the direct result of instruction, only knowledge and skills are addressed here. This should not be construed as a denial of the importance of these outcomes. Rather, it is an admission that such learnings are most likely to be acquired by workers who have been exposed to a well-designed training system and in the example of site training and development personnel.

Subject-Matter Characteristics

Each subject-matter area has intrinsic characteristics that significantly affect the way in which it can be analyzed and organized for learning. Some subjects, such as mathemat-
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Sciences. The sciences, both physical and biological, are among the easiest to define and organize. The content of the sciences consists of objective, empirically verifiable facts and principles. The systems designer, therefore, has a firm basis for selecting the material to be included in the training program. In training and development, subject matter in this category is often found in training programs designed for technicians, engineers, and scientists. However, almost every training and development program contains some scientific content.

Mathematics. In many ways, mathematics content is the simplest to analyze and organize. Mathematical concepts, principles, and facts are all logically related, and they have been exactly defined. The required mathematical skills and knowledge can therefore be specified with considerable precision. In addition, mathematics is not subject to frequent or radical content changes. For this reason, it can be considered a relatively stable subject matter. Mathematical content, like scientific subject matter, is likely to be a part of most training and development programs, although its greatest use is found in training programs for technicians, engineers, and scientists.

Social Sciences. Except for certain aspects of psychology and economics, the social sciences lack the level of definition and precision of mathematics and the physical and biological sciences. Terminology also varies considerably in the social sciences, and there are few standard terminologies. In addition, the social sciences overlap. For example, it is impossible to define where psychology and sociology end, and where supervision and management begin. Nearly every important management principle is essentially a distillation of subjective and normative judgments. For these reasons, subject matter related to the social sciences cannot be easily broken down into small components that can then be organized and sequenced as building blocks. This combination of characteristics poses serious problems for training and development systems designers. They must find creative ways to define the subject-matter area to be covered, the meaning of terms, and the best way of selecting the subject matter to be taught. Social training, human relations training, supervision training, and management and executive development are heavily weighted with social science content. However, all training programs are likely to include some content in this category.

Industrial, Business, and Military Arts, Crafts, and Skills. The various subjects that make up the great bulk of training programs in business, industry, and the military can be defined and organized with relative ease. Job and task analysis provides the skeleton that is later fleshed out with the required subject matter. The theoretical portion of the subject matter typically consists of scientific and mathematical facts and principles. The elements of skill, however, make up the major part of the subject matter to be taught. It is important to note that it is easy to include theoretical knowledge that is not needed for satisfactory job performance. Great care must be taken by the systems designer to avoid including nonessential materials. This is the category of subject matter.
Selecting and Sequencing Content

most commonly found in training and development. Trade and semiskills, safety, and technical training are examples.

Sources of Content

There are two basic sources of content for training and development systems: they are job data (job analysis reports, and performance objective workcards, Figure 9-2) and documents (organization and function manuals, policy manuals, standard operating procedures, technical manuals, operator or maintenance manuals, standard reference books, textbooks, periodicals, and the like). Documentary sources are complementary and supporting sources of content, but the primary source of training system content must always be the job data.

Job data is, more specifically, job tasks must be subjected to detailed analysis to identify the facts, principles, concepts, and elements of skill required to support acceptable performance of the job. In selecting specific training system content, the following criteria should be applied: (1) the content must be relevant to the job; that is, it must be directly related to an element of performance identified by task analysis; (2) the content must be important to the development of the required performance; that is, without the knowledge or elements of skill, the trainee could not perform the task satisfactorily.

Documents used to support training and development systems must also meet certain standards: (1) they must be authoritative; (2) they must be consistent with the position and approach of the enterprise; and (3) they must not conflict with approved policies or procedures.

Types of Tasks

Job analysis produces a list of tasks essential to the performance of a job, but task specifications alone do not provide the degree of detail needed to select the subject matter necessary to trainee performance. Although there is no standard agreed-upon classification of tasks, Smith has identified types of tasks associated with three major groups of jobs: operator, maintenance, and clerical and administrative.

But there is an additional category: supervisory and managerial tasks. Various types of tasks are listed under each of these headings in the paragraphs that follow.

Operator Tasks. Operator tasks are associated with the operation of equipment (they may also include things that managers must do themselves). For example:

- Fixed Procedures. These are tasks characterized by an identical sequence of elements, each of which is performed in the same order each time the task is performed. Piping, pressure checks are examples of fixed procedures.
- Variable Procedures. These tasks are characterized at some point by choice about which of several elements to apply, for example, first-aid procedures.

- **Discrete Tasks.** These are tasks that can be divided into clearly separate elements. For example, operating a computer involves a series of separate task elements.
- **Continuous Tasks.** These are tasks that cannot be divided into separate elements when performed. Examples are flying an airplane and interviewing.
- **Tracking Tasks.** These tasks involve maintaining a directional or spatial relationship between an operator's equipment and some moving object; for example, tracking a target.
- **Aiming Tasks.** These tasks required the operator to bring equipment into a linear relationship with a stationary target; for example, aligning the marker with a desired station by moving it along the frequency scale of a radio or adjusting the vernier on a micrometer or sextant.
- **Searching Tasks.** These tasks involve actively looking for cues in the work environment; for example, conducting a safety inspection.
- **Scanning Tasks.** These tasks involve searching for cues subsidiary (but related) to the activity of the moment; for example, scanning the instrument-panel of a vehicle while driving.
- **Discrimination Tasks.** These tasks involve observing cues that will cause the operator to take different actions; for example, noting changes in the color of processed materials.
- **Noise-Filtering Tasks.** In these tasks the relevant cue is partially obscured by irrelevant cues and the task is to filter out the "noise" so that the appropriate cues may be attended to; for example, a pilot listening to the air controller through static.
- **Short-Term Remembering Tasks.** These tasks involve the recall of facts or procedures for short periods of time; for example, remembering the responses made on an interview.
- **Long-Term Remembering Tasks.** These tasks involve recall of facts or procedures for long periods of time; for example, remembering mathematical formulas, resistor color codes, or standing operating procedures.
- **Coding Tasks.** These are tasks that involve the use of codes and symbols; for example, map reading, blueprint reading, and tasks using electronic symbols, mathematical symbols, Morse code, the phonetic alphabets, or computer codes.
- **Decision-Making and Problem-Solving Tasks.** These tasks are performed on the basis of complex factors and involve a goal to be reached and the selection of a path to the goal. Sometimes the goal itself must be selected. In any event, the task involves combining facts and assumptions, noting available alternatives and their implications, establishing criteria for choosing actions, applying criteria or rules for selecting a solution, and fixing priorities.

**Maintenance Tasks.** There is no sharp division between operator and maintenance tasks. Both require procedures, problem solving, identification, the use of codes, and other similar task elements. However, mechanics, repairers, and technicians have some unique and identifiable tasks.

- **Preventive Maintenance Tasks.** These tasks involve periodic inspections of equipment, repairs, and routine servicing performed according to a schedule or after a
Selecting and Sequencing Content

A certain number of hours of operation. For example, dusting, cleaning, painting, lubricating, and engine changes are usually scheduled tasks.

- Normal Operating and Checking Tasks. These are similar or even identical to operator tasks involving either fixed or variable procedures of preventive maintenance, verifying operator's reports of malfunctions, and the like.

- Adjustment Tasks. These tasks involve making adjustments to equipment or procedures during preventive maintenance checks or troubleshooting.

- Troubleshooting Tasks. These tasks involve the identification of malfunctioning components in equipment or systems. In many respects these tasks are similar to problem-solving and decision-making tasks.

- Repair or Replacement Tasks. These occur when the malfunctioning component has been identified and localized. The component may have to be repaired or replaced. Fixed procedures are usually involved in these tasks.

Clerical and Administrative Tasks. There is no sharp line of demarcation between operator and clerical and administrative tasks. In fact, much of the material pertaining to operator tasks also applies to the present category. Some tasks involve fixed procedures; more involve variable procedures:

- Keyboard Tasks. Many clerical and administrative jobs involve typing or other kinds of keyboard skills, although the standards of performance are usually lower than those established for typists, secretarial personnel, and stenographers. Examples of keyboard tasks include preparing routine interoffice correspondence and completing forms and records.

- Filing Tasks. These tasks involve cataloguing, indexing, and physically placing materials in containers in accordance with an established filing system.

- Recording Tasks. These tasks involve making entries in various records, completing forms and simple reports, tabulating, and making relatively simple calculations in accordance with detailed instructions.

- Operating Tasks. These tasks involve the operation of simple office machines, including duplicators, photocopiers, stapling machines, paper punches, and the like.

Supervisory and Managerial Tasks. Many of the types of tasks identified as operator, maintenance, and administrative and clerical tasks have their counterparts in supervisory and managerial jobs. Of course, the degree of difficulty and complexity in the performance of supervisory and managerial tasks is considerably greater. Generally, these tasks can be catalogued under the five functions of supervision and management. It should be noted that in addition to the tasks listed below, all the functions of the manager or supervisor involve decision-making tasks:

- Planning Tasks. Planning tasks involve assessing the status of an activity, predicting the environment of the future, establishing goals, anticipating obstacles, and...
designing strategies to overcome obstacles to the achievement of the desired results. Examples are establishing objectives, policies, plans, procedures, rules, and programs; preparing budgets; and making personnel, product, or other types of forecasts.

- Organizing Tasks. These tasks involve identifying the activities and skills required to perform needed enterprise functions, grouping these activities into logical sub-divisions, delegating authority, and clarifying authority relationships. Examples are establishing or changing the organization structure, preparing an organization and functions manual, and developing job descriptions and applicant specifications.

- Staffing Tasks. These tasks involve actions related to the acquisition, training, and assignment of personnel, including recruiting, selecting, training, promoting, retiring, and terminating employees. Examples are employment interviewing, counseling, and coaching.

- Directing Tasks. These tasks involve various means of getting maximum performance from employees. Examples are delegating, motivating, guiding, and communicating.

- Controlling Tasks. These are tasks that aim to ensure that performance conforms with plans. They apply to persons, equipment, and processes. Examples are establishing standards (cost, time, quality, or quantity), measuring performance, reviewing and being on reports, and preventing or remediating deficiencies.

Guidelines for Identifying Knowledge Requirements

As noted earlier, items of knowledge to be included in training and development programs must be derived from the task and element descriptions prepared after job analysis. These knowledge must help the trainee to perform the task. They should not be taught simply because they have traditionally been included in training programs. The following guidelines should be applied by the systems designer in identifying the knowledge supports for task elements, tasks, and duties:

1. When Nomenclature and Locations of Objects Must Be Known. If the trainees are to be able to relate symbols to ideas, or symbols to action, they must have a vocabulary of terms. For this reason, practice in naming and locating work objects, tools, or cues is essential.

2. When the Trainees Must Know What to Search for in the Job Environment. By learning the cues, objects, indicators, controls, and aids they must search for, the trainees can actively take part in learning the job. For example, in electronic equipment repair, the trainees must be taught what manuals, test equipment, and other aids will help them to perform a particular task. In management development, the trainees must be taught to identify barriers to communication.

3. When Precautions Are Necessary. A precaution warns the trainee to inhibit, limit, or avoid some action that might be a hazard to self, to others, or to equipment and materials. For example, safety precautions to observe in operating cutting tools and statements and questions to avoid in employment interviewing should be identified and taught.

4. When Interpretation of Symbols or Signals Is Necessary. In many tasks, the
trainee must use and interpret standard codes or sets of symbols or signals. Map symbols
and resistor color codes are examples, as are certain verbal and nonverbal cues in em-
ployee counseling. These must be identified as knowledge.

5. When Procedures Must Be Learned for Emergency Situations Not Feasible
to Simulate. Although the most effective way to acquire a skill is to practice the actual
response required by the situation, there are circumstances when reproducing the actual
response is not feasible. At other times providing enough practice to make the re-
sponse automatic is not practical. In such cases, verbal descriptions of the required re-
sponse are necessary substitutes. For example, bail-out procedures for aviators, learned
as statements of actions to be performed, are essential substitutes for practice of the
procedures.

6. When Calculations Have to Be Performed. Performing calculations is a spe-
cial form of problem solving. Training requirements identified as computations should
be specified as precise problems trainees must be able to solve. For example, it has long
been taught that an electronic equipment repair technician must "know" algebra. But in
many cases it is sufficient for the trainee to be able to remember and use the precise
formulas needed on the job. These formulas should be taught.

7. When Problem Solving, Diagnosis, and Troubleshooting Are Required. These
activities consist of a series of decisions, such as the sequence of tests to make in localiz-
ing a trouble from symptoms. Each activity involves a choice from among several
alternative responses. The alternatives available must be outlined, as well as the conse-
quences of choosing each of the alternatives. General rules or principles concerning the
feasibility of alternatives are important items of knowledge.

8. When the Operator or Mechanic Must Anticipate Later Conditions From
Earlier Conditions. Some forms of anticipation are an important kind of knowledge.
The nature of present circumstances often helps the trainee to decide what to do later.
These cause-and-effect relationships may help the trainee to anticipate a future effect
from various present conditions, or conversely, to deduce a probable cause from a given
effect. For example, when a helicopter pilot can anticipate that descent on a patch of
desert at noon will be more rapid than a similar descent on a green area (because of
differences in air density), we have an example of a knowledge.

9. When Planning Is Required. Planning usually is advance preparation to ensure that
people, equipment, and materials are in the right place at the right time. Examples are laying out tools and materials in an efficient work
arrangement, and laying out parts in such a way as to avoid confusion or loss. How to
make such plans is a knowledge requirement.

10. When Strategies Are Required. A strategy is a series of maneuvers based in
part on one's own capability and in part on the capabilities and responses of an adver-
sary. The essential knowledge consists of one's own capabilities with respect to the
adversary at any given time, and the procedures by which the adversary's capabilities
and options can be reduced (or at least his intentions revealed). For example, in mar-
keting new products, the advertising strategy to be applied is crucial. The elements of
the strategy are knowledge.

11. When the Operator or Mechanic Must Act in Accordance With Briefing
Instructions. Many of the knowledge previously discussed have operational signifi-
cance in understanding briefing information and carrying out instructions. Briefing on
mission or assignments is a phase of operations that may be neglected in the identification of training requirements. Operators must frequently make individual plans, anticipations, calculations, interpretations, and decisions that are consistent with statements of objectives, procedures, and conditions. Types and forms of briefing data, and their contents, should therefore be examined for clues to knowledge content.

12. When Inventions and Improvisations Are Required. An improvisation is the adaptation of an object or technique commonly used for one purpose to serve another purpose. An invention is the construction of some "new" object, contrivance, or procedure to fulfill the requirements of some purpose. The need to invent and improvise is rarely identified as a job requirement, but the development of these capabilities provides a margin of safety in job performance. The knowledge required for improvisation includes the functional requirements of equipment parts as they relate to the functional capabilities of objects likely to be available as substitutes in the work environment.

13. When Ideas and Knowledge Will Simplicity. The previous factors have generally dealt with knowledge that would be of use to personnel working on the job. There may also be some ideas, concepts, and knowledge that will help trainees to learn the job. These are statements that permit many ideas and actions to be associated with each other, so that what seems complex becomes simple. An example is an organization chart helps trainees to learn the interrelationships of authority and responsibility in an organization.

14. When Identification and Recognition of Objects and Complex Signals Are Required. Recognition of certain types of objects and signals is often necessarily taught separately. Examples are aircraft recognition and radioscope interpretation. The defining characteristics of these objects and signals are required knowledge.

15. When Use of Tools and General Test Instruments Is Required. If a tool is to be used in only one task, it is best taught as an integral part of that task. However, many tools are employed in a variety of tasks. In this case, trainees can be taught generalized skills in using tools instead of being taught the use of the same tool over and over as they are needed in each task. There are many tricks of the trade in the use of common tools. There are also abuses to avoid. These knowledge and manipulative skills can be identified and taught.

The Process of Content Selection

The act of identifying the facts, concepts, principles, and skills that support a performance is comparable to the process of outlining the "points to be taught" in a conventional lesson plan. The essential difference is that the content selector has a list of specific statements of required performance rather than such vague guides as "to provide a working knowledge" of some subject. Having a set of performance objectives permits the systems designer to focus on training outcomes and to identify the content of each lesson more precisely. This does not mean, however, that the presence of performance objectives makes content selection a mechanical process, but it does simplify the job and remove most of the guesswork.

Outlining Course Content

The usual procedure is to prepare a rough draft of the outline, indicating the major subject-matter areas to be covered, and then gradually expand the outline until a detailed
Selecting and Sequencing Content

statement of content is produced. Some designers prepare a two-dimensional matrix in which training objectives are listed on one axis and the content categories are listed on the other. In the resulting cells, the specific facts, concepts, principles, and skills needed to achieve the objectives are inserted.

Periodic review of outlines during development will help to indicate omissions and duplication.

Steps in Content Selection

The following steps should be followed in selecting training system content:

1. Using the 15 guidelines for identifying knowledge requirements presented earlier in this chapter, examine each performance objective and develop separate topical outlines for each task. Include all the major knowledge and skills required to achieve the specified performance. The product of this step is a complete outline of the required learnings for each job task. That is, every major concept, principle, skill, or value required for demonstration of each objective is listed, regardless of the fact that duplicative items may appear under two or more objectives.

2. Submit the topical outline to subject-matter experts for a check of completeness and accuracy. The purpose of this step is not to review for detail, but rather to ensure that major items of content required for performance have been included and that nonessential content has been omitted.

3. Review the topical outline in accordance with the recommendations of the subject-matter experts.

4. Develop a detailed content outline for each topical outline or performance objective. Each item in the preliminary topical outline should be analyzed, and the learning points should be formulated in declarative statements, using appropriate references.

5. Eliminate unnecessary duplication within the detailed points to be taught. If a teaching point essential to the development of a concept or skill later in the sequence duplicates a teaching point developed earlier, identify it as a review item of content.

6. Compare the refined content outlines with the performance objective workcords (see Chapter 9). Make whatever final adjustments seem to be indicated.

7. Submit the detailed content outlines to subject-matter experts for final review.

8. Review the contents outlines as indicated by the reports submitted by the review.

Sequencing

Sequencing is the process by which the content and learning experiences are placed in the configuration that will produce the most learning in the shortest possible time.

Importance

Proper sequencing of training objectives has often been neglected or given only cursory attention by course designers and developers. Yet sequence is extremely important because it can have a significant impact on the efficiency and effectiveness of learning.
Proper sequencing of learning objectives will (1) help trainees make the transition from one skill or knowledge element to another, (2) ensure that prerequisite and supporting skills and knowledge are acquired before dependent performance requirements, skills, or knowledge are introduced, (3) reduce training time, and (4) prevent trainee confusion and failure.

Experience with sequencing activities has resulted in the following findings: (1) the effects of sequencing do not appear immediately; (2) proper sequencing is most critical for low-aptitude trainees; (3) proper sequencing is more important for new and unfamiliar subject matter than it is for known material; and (4) correct sequencing is crucial for nonredundant subject matter—material that is introduced once and not repeated in other contexts.

Approaches to Organization

Should the material or content be treated analytically or synthetically? This problem must be faced by all systems designers. The analytic or deductive approach to organization begins with the statement of a concept or principle. Its meaning, operation, and implications are then revealed by gradually reducing it to its component parts. The synthetic approach to organization is the converse. It begins with illustrations, applications, and examination of the parts, and ends with the generalization or whole. Which method should be used in training and development programs? Probably both, each in its proper place.

Organizing and Sequencing Subject Matter

Some subjects, such as mathematics, lend themselves easily to organization and sequencing because they are already divided into fundamentals, which must be taught first, and principles and applications, which are based on the fundamentals. Organization and sequencing in such subjects are relatively simple. In other content areas, however, the approach to organization and sequencing is not so apparent.

The social sciences and their derivatives, such as management development, may be approached as problem-centered expasions of material or as logically arranged bodies of facts and principles. The form of organization chosen depends on the objectives of the training system, the place of the program within the overall training structure, or the customary divisions of materials among the subject-matter disciplines involved. Each factor warrants careful study.

Types of Sequencing

The primary criterion in sequencing is that the order of presentation make sense to the trainees. The instructional sequence, therefore, will often differ from the order in which the trainee will use the skills and knowledge taught by the system. The sequence of learning experiences can be established on one or a combination of several bases as follows.

Logical Order. With logical sequence, materials are presented either in order of difficulty or in accordance with a logical arrangement of the subject matter. When it is evident that logical order must be preserved in presenting the content, the systems designer need only determine the best means of presentation; the sequence is already
Selecting and Sequencing Content

established. It must be remembered, however, that with logical order trainees may not see why they should learn the material, nor will they be able to make immediate use of the newly acquired knowledge or skill.

Problem-Centered Organization and Sequencing. Sometimes it is desirable to pose a general problem and then describe the various means of solving it; or where no solution exists, it is possible to identify the factors involved in the problem and develop alternative solutions. Problem-solving approaches are, of course, widely used in many types of training and management development programs. To be successful, problems should be presented in increasing order of difficulty and complexity. Adequate sampling of representative problems must be ensured.

Descriptive Order. Many content areas are highly descriptive or taxonomic. For example, programming and budgeting, data-handling and information systems, and quality control procedures involve carefully prescribed sequential operations: descriptions of methodology, equipment, and the like; and terminology. In this case the problem is to determine the best approach to clear and concise description. Adequate descriptions of the equipment, processes, and procedures must be provided. Often it is necessary to describe the systems from several perspectives to ensure that trainees obtain the required information.

Job Performance Order. This is an order based on the sequence in which a job, duty, or task is actually performed. For example, in teaching operation or repair of equipment, it is often desirable to organize and sequence the instruction in the exact order in which each task is completed by the operator or repairer. Often, however, adjustments in the sequence must be made because of the need for practice of difficult elements prior to their insertion into the total job sequence.

Psychological Order. This is an ordering of content and learning experiences based on ease of learning. For this reason it may take any one of the prior forms or a combination of all of them. In general, it means that older learnings serve as the basis for new learnings, and that, when possible, the trainee moves from the simple to the complex, from the near to the far, from the familiar to the unknown, from the concrete to the abstract.

In actual practice, all types of sequencing have their place in systems design. All types should be used. However, sequencing decisions must be based on the actual objectives and content involved in the development of specific job and task performances.

Relationships Between Objectives

When sequencing, the systems designer must know whether or not a relationship exists between two objectives and, if it does, what type of relationship it is. There are three possibilities: objectives can be independent, dependent, or supporting.

Independent. An independent relationship occurs when the skills and knowledge of one training objective are totally unrelated and completely independent of those of other objectives. For example, for a mechanic, the task "change oil and replace oil filters" is independent of the task "rotate tires." Knowing how to do one does not help with the other.
Dependent. A dependent relationship exists when mastery of the skills and knowledge of one training objective requires prior mastery of the skills and knowledge of another objective. For example, to repair a fault in a circuit, an electronic equipment repairer must first learn to solder.

Supporting. A supporting relationship is present when some amount of transfer of skills and knowledge takes place from one objective to another. For example, the task "assemble a carburetor" has a supporting relationship with the task "disassemble a carburetor." Learning to perform one task would help greatly in learning to perform the other.

Sequencing Guides
The following guidelines should be used in determining the sequence of tasks and their supporting knowledge and skills.

- Start the sequence with materials that are familiar to the trainees and then proceed to new materials.
- Proceed from the simple to the complex, from the concrete to the abstract.
- Teach trainees a context or framework to use in organizing what they are to learn.
- Place easily learned tasks early in the sequence.
- Introduce broad concepts and technical terms that have application throughout the training system early in the sequence.
- Place practical application of concepts and principles close to the point of the initial development of the concepts and principles.
- Place prerequisite knowledge and skills in the sequence prior to the points where they must be combined with subsequent knowledge and skills and applied.
- Place dependent and supporting objectives as close to their related objectives as possible.
- Place common-factor objectives (ones with identical behaviors) early in the sequence and close to the point where they are applied.
- Provide for practice and review of skills and knowledge that are essential parts of later tasks.
- Introduce a concept or skill in the task in which it is most frequently used.
- Structure objectives into closely related, self-contained groups.
- Do not overload any task with elements that are difficult to learn.
- Provide for practice of required skills and review of concepts and principles in areas where transfer of identical or related skills is not likely to occur unnoticed.
- Place complex or cumulative skills late in the sequence.

Steps in Sequencing
The following steps should be followed in sequencing skills and knowledge supports:

1. Using the guides set forth in the preceding section, lay out the task-level performance objective workcards and their supporting content outlines (see Figure 11-1).

4. To simplify the explanation, only skills are used in the example, although in actual practice both knowledge and skills are used.
Selecting and Sequencing Content

Figure 11-1. Step 1 in sequencing.

<table>
<thead>
<tr>
<th>Task A</th>
<th>Task B</th>
<th>Task C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content outline:</td>
<td>Content outline:</td>
<td>Content outline:</td>
</tr>
<tr>
<td>Skill 1</td>
<td>Skill 1</td>
<td>Skill 1</td>
</tr>
<tr>
<td>Skill 2</td>
<td>Skill 3</td>
<td>Skill 3</td>
</tr>
<tr>
<td>Skill 3</td>
<td>Skill 5</td>
<td>Skill 4</td>
</tr>
<tr>
<td></td>
<td>Skill 4</td>
<td></td>
</tr>
</tbody>
</table>

Figure 11-2. Step 2 in sequencing.

<table>
<thead>
<tr>
<th>Task A</th>
<th>Task B</th>
<th>Task C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content outline:</td>
<td>Content outline:</td>
<td>Content outline:</td>
</tr>
<tr>
<td>Skill 1</td>
<td>Skill 1</td>
<td>Skill 1</td>
</tr>
<tr>
<td>Skill 3</td>
<td>Skill 3</td>
<td>Skill 3</td>
</tr>
<tr>
<td>Skill 3</td>
<td>Skill 5</td>
<td>Skill 4</td>
</tr>
<tr>
<td></td>
<td>Skill 4</td>
<td></td>
</tr>
</tbody>
</table>

* Initial development.

Figure 11-3. Step 3 in sequencing.

<table>
<thead>
<tr>
<th>Task A</th>
<th>Task B</th>
<th>Task C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content outline:</td>
<td>Content outline:</td>
<td>Content outline:</td>
</tr>
<tr>
<td>Skill 1</td>
<td>Skill 1</td>
<td>Skill 1</td>
</tr>
<tr>
<td>Skill 2</td>
<td>Skill 3</td>
<td>Skill 3</td>
</tr>
<tr>
<td>Skill 3</td>
<td>Skill 4</td>
<td>Skill 4</td>
</tr>
</tbody>
</table>

* Initial development.

Note that in the figure there are duplicate numbers representing the required skills in the content outlines for each task. This is explained by the fact that a basic set of required skills often appears under two or more tasks. Identifying these duplications permits optimum sequencing.

1. Code items in the content outline (see Figure 11-2). Determine whether each item of content should be initially developed within the task where it first appears in the sequence of tasks. If so, mark the skill ID (initial development) in the outline. If the item should be initially developed in another task, annotate the outline under the proper task. Uncoded items are skills that must be developed before the total task is performed.

2. Make necessary compromises where specific tasks and their supporting skills are interdependent. The decision about where in the sequence the task should be placed
Figure 11-4. Step 4 in sequencing.

<table>
<thead>
<tr>
<th>Task A</th>
<th>Task C</th>
<th>Task B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content outline:</td>
<td>Content outline:</td>
<td>Content outline:</td>
</tr>
<tr>
<td>Skill 1</td>
<td>Skill 1</td>
<td>Skill 1</td>
</tr>
<tr>
<td>Skill 2 ID</td>
<td>Skill 3</td>
<td>Skill 3</td>
</tr>
<tr>
<td>Skill 3 ID</td>
<td>Skill 4 ID</td>
<td>Skill 4</td>
</tr>
</tbody>
</table>

* Initial development.

It is made on the basis of secondary guidelines, such as difficulty in acquiring the knowledge or skill, or on the basis of an equitable distribution of difficult materials among the several tasks (see Figure 11-3). Note that the sequence of tasks has been changed from A, B, C to A, C, B.

4. Complete the coding (see Figure 11-4).

CHECKLIST FOR SELECTING AND SEQUENCING CONTENT

Content Outlines:

☐ is only necessary and relevant content included?

☐ Have the following categories of material been considered for inclusion:
   - Nomenclature and location of objects?
   - Cues, indicators, and controls relevant to the work environment?
   - Precautions to be observed?
   - Symbols and signals?
   - Emergency procedures?
   - Calculations and formulas?
   - Available alternative actions and their consequences?
   - Criteria for acceptable decisions or solutions to problems?
   - Errors to avoid?
   - Cause-and-effect relationships?
   - How to plan?
   - How to arrange equipment, tools, and materials?
   - How to develop strategies?
   - How to invent and improvise?
   - Aids to learning?
   - Characteristics of objects and signals?
   - Step-by-step procedures?
   - Use of tools, job aids, and test equipment?

☐ Are source documents current, authoritative, and consistent with enterprise policies and procedures?

☐ Have draft content outlines been prepared and reviewed by subject-matter experts?
Selecting and Sequencing Content

- Have gaps in content, overemphasis and underemphasis, and unnecessary duplication and overlapping been avoided?

Sequence

- Are the materials arranged so that the trainees can see the necessity for each step in the instruction; that is, does the sequence have meaning for the learner?
- Does the sequence start with material familiar to the trainee and proceed to new materials; that is, does the sequence move from the known to the unknown?
- Does the material proceed from the simple to the complex, from the concrete to the abstract, when this is feasible?
- Is a context or framework taught for trainees to use in organizing what they are to learn?
  - Are common-factor training objectives placed in the sequence as follows:
    - Early in the sequence and not repeated?
    - Close to the point where they are applied to minimize forgetting?
  - Are training objectives structured into closely related, self-contained groups to
    - Facilitate understanding of the scope of the training and interrelationships?
    - Provide organized, manageable blocks of content?
    - Enable designers to work on groups of objectives independently without danger of duplication of effort?

For Further Reading, Viewing, and Listening


246  DESIGNING TRAINING AND DEVELOPMENT SYSTEMS


Choosing a Delivery System

Training developers now have an imposing array of options for delivering training. Only a few years ago the choices were limited to a few alternatives, and most trainers opted for conventional, instructor-led classroom and laboratory training. Only a few were willing to experiment with what were then called training devices—closed circuit television, teaching machines, programmed instruction, and computer-based training. The choices today enable trainers to select the delivery system or systems that will provide effective training at an affordable cost. So the challenge to the trainer is to select the best delivery system for the intended purpose and obtain the approval of top management for that selection.

Selecting a delivery system should never be based on expediency. A sounder, more objective method of making such an important decision must be employed. The costs of mistakes are too high. Choosing a delivery system requires not only knowledge of what is currently available or on the horizon but also some firm criteria for the selection of the optimum means of getting training to those who need it.

Decisions on packaging systems must be made following careful consideration of the training situation, context, and environment from several perspectives: the trainer population, its size, location, and composition; availability of training resources and expense; training objectives and content; space, facilities, equipment, and instructional materials; time, and costs.

Upon completing this chapter, the reader will be able to perform as follows:

| Behavior | Select the most appropriate and cost-effective training delivery system for achieving specific training or development objectives.
| Conditions | Given: performance objective, workforce (Figure 9-2), information about trainers, availability of training resources, time available for training, and cost limits.
| Criterion | In accordance with the standards and procedures described in this chapter. |
Factors in Delivery System Selection

Several factors must be taken into account when deciding which of the several available delivery systems is to be implemented.

Instructional Objectives

The important thing here is to consider the real thrust of the training without getting into detailed lesson- or module-level training objectives. For all practical purposes, instructional objectives may be catalogued as orientation and induction, concept development, skill building and practice (physical and mental), skills mastery, problem solving and decision making, creative endeavor, enrichment, individual development, retraining, team training, review, and make-up. But, there are some additional considerations: Is standardization of instruction critical? Is the content subject to change? Are there problems of integration with other enterprise operations, programs, and activities?

Trainee Population

Here the deciding factors relate to the nature of the trainee population. Is the trainee group relatively homogeneous in terms of aptitude, ability, communication skills, prior training, and experience? Or is it relatively heterogeneous? Is the number of people to be trained large or small? Are they to be trained simultaneously or does it matter? Are they all at one location or are they widely scattered?

Instructors

How many instructors are available? Where are they located? Can they be moved? Are they technically qualified? Are they experienced? Are they trained in the use of the delivery systems, strategies, methods, and techniques they will be called upon to apply? What are their pedagogic strengths? Shortcomings? Do they have strong preferences for any training strategy? Method of instruction?

Instructional Facilities, Equipment, and Materials

Some of the most critical questions here are: Is instructional space of the right kind available? Classrooms? Conference rooms? Shops? Laboratories? Food services? Housing? model accommodations? Is all of the available space in one location or in several? Are facilities such as offices, break rooms, library, learning center, and storage available adjacent to the primary instructional space? Is equipment on hand and in good repair? Audiovisual? Computers? Operational equipment and tools? Is there enough equipment to accommodate the desired or required group size? Are materials available and in adequate supply? Software? Books and manuals? Film and tapes? And so on.

Time

Here there are many important questions. What is the best estimate of the duration of the training in weeks or hours? How much lead time for training is available before the products of the training system must be productive members of the workforce? Must all
Choosing a Delivery System

Trainers complete the training at the same time or does it matter? How much time will be required to develop and validate the training systems?

Costs

Usually this is the most critical of all the considerations. Sometimes, however, dollar costs must take a back seat to other criteria, particularly when the lack of an immediate response to a training requirement is likely to result in loss of employee motivation and morale, failure to win a large and lucrative contract, or a destructive drop in competitive status. But, the root question is this: How much can the organization realistically budget for training development and for the conduct of the training over the time required? Although firm numbers may be difficult to calculate, good estimates are absolutely essential if the criterion of costs is to be considered.

Delivery Options

What are the options now available to training managers and trainers to deliver training to employees? There are many. In general, they fall into six categories: one-on-one training, interactive training, distance training, centralized training, learner-controlled (self-directed) training, and "other" training. Although there is some overlap among these alternatives, for the sake of convenience they will be treated here as discrete delivery options.

One-on-One Training

One-on-one training invariably involves two persons—one the learner and the other an instructor, facilitator, or mentor. This type of training provides day-to-day learning experiences under the guidance of a conscientious and experienced coach or supervisor. Strategies include telling or explaining, questioning, showing or demonstrating, drilling or practicing, providing feedback, and following up.

Individualized Instruction. This option, also called self-paced training, involves the use of instructional systems, programs, or lesson modules designed to allow individual trainees to proceed at their own rate through a sequence of learning activities. An instructor is available to answer questions and help trainees who are experiencing difficulty. Activities are designed to provide for individual trainee differences in learning style, experience, attitude, ability, interest, and needs. The objectives of such systems are to reduce training time, increase learning gain per unit of training time, reduce trainee alienation, and reduce instructor requirements and training costs.

On-the-Job Training, Coaching, or Tutoring. This alternative involves planned and organized training conducted at the workplace by a co-worker or supervisor. It is a one-on-one, face-to-face teaching/learning/counseling relationship designed to develop job-related knowledge and skills and improve performance. It requires a continuous flow of instructions, comments, explanations, and suggestions from coach to employee—with the coach or tutor listening, questioning, relating learning to the learner’s experiences, and providing guidance. The coach or tutor works with an individual trainee demonstrat-
ing, assisting, motivating, encouraging, rewarding, and providing guided practice and feedback on performance.

The coaching option is used primarily to teach complex skills and operations, those that present danger to the trainer or hazard to expensive equipment, or for remedial instruction. It is used when the number of trainees is small and the training is needed infrequently, and is a follow-on to other forms of employee training. It has the advantages of being flexible and adaptable, applicable to almost any type of training, requires little or no development time, demands no special facilities or equipment, and involves no overheard costs. Its disadvantages are that its success depends on the competence of the coach or supervisor, and it is limited to one trainee at a time.

Interactive Training

Learners must be active in the process if learning is to be effective. Interactive training systems (ITSs), sometimes called interactive performance systems, performance support systems (PSSs), or on-demand learning systems, are learner-controlled systems that support workers by providing immediate and on-line access to information, advice, and learning experiences. An ITS is provided at the workplace, on the workbench, or at a workstation by other than a live instructor. The training vehicle may be multimedia or a computer. The systems can be designed to provide interactive advice on how to perform a task or operation or make a decision. The information bases of computer-driven performance support systems contain text, graphics, audio, and traditional (alphabetic) data bases.

Interactive training technology has advanced to the point where there is no longer a need to master formal computer programming languages to produce multimedia training materials. Hardware and software capable of handling multimedia materials are now available and allow trainees to produce new materials quickly and easily—and allow trainees to learn efficiently at their workstations (see Chapter 13 and Appendix B).

These systems are appropriate for many types of training and for all types of trainees. Although instructors are not required, the systems are very expensive to develop and are therefore not recommended for training programs with content that is subject to frequent or radical change.

Job Aids: These are materials that provide step-by-step directions for performing specific technical tasks to reduce training time, error rates, and dependence on instructors. They may be in paper form (documents, procedures manuals, or job instruction sheets), or audiovisuals (slides, motion pictures, or videocassettes). Job aids provide several benefits. They are relatively inexpensive to produce in quantity and are reusable. They sometimes are provided by the supplier of the equipment. Their principal disadvantage lies in their applicability, which is primarily in technical areas. An additional disadvantage is that they typically rely on only one medium.

Embedded Training (ET): Embedded training is built into the software of computer applications programs—the programs the employee uses on the job—rather than provided in a separate training package. ET is on the same terminal or delivery device as the product it supports. A program that teaches an employee how to use a spreadsheet while using the spreadsheet itself is an example of embedded training.

Multimedia: Multimedia is the output provided by combining a variety of former independent sound and visual media, with a computer in control. This has been
made possible by the conversion of analog phonograph records and broadcast TV analog standards to digital formats and standards. Multimedia consists of combinations of hardware, software, and learningware in one easy-to-use package that can deliver still and dynamic imagery, text, audio, graphics, animation, and video, and even full motion, at one workstation or learning center. It can bring together text, graphics, animation, captured screen images, and video, as well as digitized audio and CD-ROM. Multimedia has become the standard for presentations of all types, from advertising to training.

**Interactive Video Systems (IVSs).** Interactive video technology offers new opportunities for involving learners. It enables teachers to communicate with and control a video training program by using a computer to interface with videocassette or videodisc recorders. The most sophisticated systems provide random access to the contents of the training or other program through a keyboard, mouse, or touch screen (finger touch of the CRT), with responses of the system determined by the user’s input. However, it is also possible to create interactive circuits composed of videocassette, an instructor, and the trainee.

**Videocoded materials (linear video)** employ signals that can only be accessed sequentially. However, they can be made interactive by employing some conventional instructional techniques, such as posing questions to the trainees in advance and engaging in discussion following the viewing. Stopping the video at preselected points to discuss a particular scene, and searching for illustrative scenes and using them as case studies. Videotape programs are less expensive to produce than videodisc, but they do wear out.

**Audiovisual packages** typically use a single medium, such as 35-millimeter slides and filmstrips, 8-millimeter motion pictures, or videocassettes, to present lessons or training modules. Because trainees cannot respond directly to the prompts or the audiovisual materials, interactivity is achieved by complementing and coupling the audiovisual part of the package with a workbook.

**Interactive videodiscs** also employ signals that can be randomly accessed. These devices use 3-inch and 5-inch optical disc recorders and players in which the information and images are written and read by a laser beam, not a recording head. The discs spin, but there is no contact between the head and the recording media—so there are few parts to wear out. Videodiscs can store up to 650 megabytes of data. They can be plugged into a computer or a monitor and controlled through a joystick or other nonkeyboard interface. The capacity of the devices makes it possible for optical discs to integrate text, graphics, still video and motion in one package. They also produce high-quality sound.

By their very nature interactive videodiscs require dialog between the media and the learner. The learner uses a keyboard, a mouse, or some other remote control device (including the touch of a finger to the screen) to respond to questions or commands from the narrator or video cues and prompts. Each technique requires active responses from the trainees before the program advances.

The advantages of videodiscs! Obviously, their storage capacity for text, images, and sound. But, there are others. In addition to random access features—instantaneous access to any point on the videodisc—most interactive video systems also feature simulations as an integral part of the training programs they carry. Their flexibility is another plus; they permit the trainee to skip known content and skills that have been mastered and repeat material when needed. They can also produce and hold on screen single frames with clear resolution. And they are reusable and nearly indestructible.
Their main disadvantage is cost. They are expensive to produce and are only affordable when there is a very large number of people to be trained. Similarly, they are only appropriate when the content is relatively stable. If they are commercially available, off-the-shelf discs, the illustrations and examples used may not relate to the user's organization. They cannot be modified because they are CD-ROM—compact disc, read-only memory.

Artificial intelligence (AI) systems (particularly expert systems) have several capabilities with potential for use in instructional systems: limited language or voice recognition, intelligent tutoring, and machine vision. One type has embedded human expertise, which enables users to improve their performance without necessarily increasing their understanding of the principles or theory involved. A second type emulates human intelligence by applying rules programmed into the system to make decisions. Although very expensive at this stage of development, AI has great promise for use in interactive training systems.

Hypermedia, sometimes called electronic performance support systems, make use of a combination of multimedia and computers. They are integrated computerized systems, composed of a database and support functions that provide on-line assistance to trainees (or workers as the main feature of intelligent workstations) in the form of advice, assistance, data, tools, and images. Multimedia has three distinguishing characteristics: interactivity, which gives the user the ability to control movement through the database, random access, which allows information to be acquired nonsequentially, and sourcings, which provides cross-referencing. These features give the option great potential.

The main advantages of hypermedia are its visual capability, its power to bring to bear the emotional impact of images, and its capacity for interactivity with the learner. But it has additional advantages: flexibility in terms of subject matter and use by employees (on the job, in the office, or in a learning center); consistency in training; improved learning and retention, and it is self-paced. Its major disadvantages are high development costs, its inability to meet needs for dynamic training, and its inappropriateness for subject matter that is subject to frequent change.

Computer-Based Training (CBT). CBT involves the use of computers to deliver instructional packages either at a central training facility or at the workplace through local area networks (LANs), modems and telephone lines, microwave, or satellite. It can be used in tutorial, drill, practice, games, modeling, simulation, and problem-solving modes to reach a great variety of content and job knowledge and skills: complex analytical skills, manipulative or cognitive skills, deductive inference and advanced problem solving.

Originally, CBT was viewed as one of the most effective means of presenting single-topic, stand-alone training programs. Today it is more likely to be found as one component of a larger training package that might include video, multimedia, workbooks, even classroom training.

1. An enabler is a term of hardware or software that performs in such a way that it seems to be general in function to (as well as compatible with, although it may not look like) the type of hardware or software it is designed to initiate.

2. A local area network is any multiuser electronically linked system for communicating data in the same format, one-way or interactive, in one building or at many sites in the same general area. So, in training, a LAN is a means of facilitating, distributing, or delivering training to individuals and groups.
Choosing a Delivery System

CBT's main advantages lie in the availability and pervasiveness of PCs, flexibility, growing user-friendliness, interactive capability, speed of reaction, increasing availability of simple authoring systems, capacity for instantaneous information transfer and content standardization, ability to create simulations, power to individualize instruction, and potential for reducing instructional costs, travel time and costs, and time away from the job for training.

The primary disadvantages of CBT are trainee computerphobia (yes, it still exists), unrealistic expectations of trainers and trainees, assumed instructional limitations by some managers and trainers (to repetitive drill and practice), its high development costs, particularly in-house development, lack of programs that truly exploit the capabilities of the medium, and isolation of trainees from human interaction (a case of misuse).

CBT is controlled by others in the sense that others schedule the training, structure the flow, determine alternative sequences, and administer the tests. Lessons are presented in the following modes: drill and practice, tutorial, problem solving, modeling, and simulation. CBT is often used as a readiness package for employees who later undergo group (seminar or workshop) training in some aspect of supervision or management.

Distance Training

Distance training is provided for adults at remote locations by such means as correspondence courses, teleconferencing, business television (BTV), and microwave and satellite systems.

Correspondence Study. Correspondence study is conducted by mail or other means of delivering training packages. It uses books, manuals, workbooks, tests, and sometimes audio or videocassettes, and typically involves the completion of reading, writing, viewing, and problem-solving assignments and the completion of tests that are returned by the trainee to the sponsoring organization for review, correction, grading, or other form of feedback. Correspondence study can be used to provide almost any type of training, although if equipment is involved, it must be made available to trainees. Its main disadvantage lies in the fact that trainees must be sufficiently motivated to pursue their learning on their own. Many people cannot meet that challenge.

Teleconferencing (Teletraining). Teleconferencing involves satellite, microwave, or phone-line TV point-to-point communication links established between two or more groups at two or more locations to provide instantaneous interchange of aural and visual information. It may take any of four modes: (1) video conferencing, which uses TV images plus sound at all locations; (2) computer conferencing, where computers at several sites are networked; (3) audio-visual conferencing, where two-way audio via telephone and visual images via FAX are the means of communication, and (4) audio conferencing, voice communication by means of telephone or radio. Of course all modes of communication can be distributed by satellite. That option requires a large initial investment; however, it can sometimes be justified by savings in travel, lodging, and subsistence costs over time.

New developments on the horizon include fiber optics, devices that allow multiple signals to be broadcast over a single phone line, produce a clearer picture not vulnerable to atmospheres, and are cheaper to install and maintain than satellite communications. A second development is holography, three-dimensional images that enhance realism.
Teletraining has the advantages of efficiency, accessibility, effectiveness, and economy, as well as the attributes of immediacy (for example, providing training on new products and processes, new developments in medical diagnosis and treatment, or other time-sensitive topics), standardization of training in widely dispersed organizations, and a reduction in paperwork and travel. It also provides a solution to the problem of providing instruction to many when there are only a few (and expensive) experts qualified to present the instruction. And companies can receive preproduced and live video programs packaged by subject and distributed by satellite that are applicable across industries and professions. Its disadvantages lie in initial equipment and continuing maintenance costs, reluctance of trainers to use it, and the need for careful planning, coordination, and attention to detail to maximize its benefits.

Centralized Training

Instructor-Led or Didactic Training. Didactic training involves an instructor, a group of trainees, and a classroom or laboratory and employs the standard lecture, conference-discussion, demonstration, and performance (practical exercise) methods of instruction as well as such techniques as questioning and audiovisual aids. It may be provided internally by staff or by external contractors.

The advantages of instructor-led training make it a viable training option even today. Conventional training can be customized to meet organizational needs. It is flexible because the instructor can adjust the content, instructional strategy, methods, and techniques to trainee needs. The approach does have disadvantages: its success depends almost entirely on the competence of the instructor. For large and dispersed trainee populations, it is expensive because it requires additional instructors and often substantial travel and subsistence costs.

Learning Centers. Learning centers employ a resource facility that offers materials in a variety of formats for individual study: audio- and videocassettes, computer-assisted and computer-managed instruction, interactive video, compact disc, 8-millimeter and 16-millimeter film, programmed and conventional books and workbooks, periodicals, manuals, organization documents, and a large number of programmed materials in audiovisual forms (sound-filmstrip, 35-millimeter slides, overhead projectors, and so on).

The main advantage of learning centers is that they provide a viable alternative to classroom-centered, instructor-controlled training. However, there are other benefits. They can be placed close to the trainee population to cut travel costs. They require little space if equipped with individual learning centers, and there is a wealth of off-the-shelf, commercial learning packages in a variety of formats available at relatively low cost.

Disadvantages? The most important potential drawbacks are the lack of interaction between learners and instructors, their limitations in improving interpersonal communications, and the need for trainees self-motivation and perseverance.

Learner-Controlled Training (LCT)

LCT, sometimes called self-directed learning, is an approach in which the learner, rather than the instructor, plays the primary role in such activities as planning, objective-setting, selecting the delivery system, instructional methods, and techniques, and evaluating results. It may include any or all of the conventional instructional strategies as
Choosing a Delivery System

well as special participative methods, such as case studies, role playing, and simulations.

LCT is self-motivated and self-managed planning and execution of the process of learning, changing, and improving. It may be undertaken with the assistance of an advisor, mentor, or trainer, but it always involves learner control over the learning goals, strategy, methods and materials, and evaluation.

Programmed Instruction (PI). PI is a method of self-instruction in which trainees work through a carefully sequenced and pretested series of steps leading to the acquisition of knowledge or skills representing the instructional objectives. The program may be in workbook or audiovisual format, and it may be linear (the "frames" are presented in a single sequence) or branching (the "frames" used and their sequence are determined by the responses to each item in the program, which permits the trainee to skip materials already mastered). Trainees proceed through the programs at their own rates, respond actively (or covertly) to each step in the sequence, and receive immediate feedback on the correctness of their responses before proceeding to the next step.

The method is used to teach facts, principles, concepts, and problem-solving skills; provide practice, remediation, and in-service instruction; maintain previously learned skills; upgrade production; administrative, clerical, or other skills; accelerate capable trainees; provide vertical enrichment (advanced work) or horizontal enrichment (broader contacts) in a discipline; or control the variables in an experimental learning situation.

PI can reduce time and failure rate. It is self-paced, and the forced-response and immediate feedback features guarantee continuous attention to the material and provide corrections for wrong responses. Instructional content and program sequence are predetermined and standardized because they are not subject to the whims, preferences, or biases of instructors. PI materials can be used anywhere at any time. For paper programs, no special equipment is needed and trainee group size is unimportant.

One disadvantage of PI is that commercially available programs often do not match organizational training objectives and customized programs are relatively expensive to develop. But the main problem with PI is trainee boredom or lack of motivation. The trainee population must be mature enough and sufficiently motivated to work independently.

Automated Learning Centers (ALCs). A new development is the automated learning center, which puts trainees in control of their learning activities. Automated learning centers contain multimedia workstations equipped with PCs, VHS players/monitors, audiotape/players, CD-ROM players, and interactive laser disc systems. The workstations are supported by a library of courseware.

Automated learning centers have several advantages. In addition to putting the learner in charge, they reduce costs by placing learning resources where they are needed, reducing the need for personnel, eliminating travel, and permitting use at all hours of the day and night. They enhance learning because they use a combination of media that reinforce each other—and thereby also cut training time. Their main disadvantage is shared by all other forms of self-directed learning. Their success depends on the motivation and industriousness of trainees.

Other Forms of Training

Contract Training. Here outside sources (either on-site or off the premises) are used to provide training programs for operative, supervisory, or managerial personnel.
Sources of training include colleges and universities, professional societies, management institutes and associations, and management and training consultants. Most contract training programs are conducted by conventional lecture, demonstration, discussion, and practical work in a seminar or workshop format.

**Customized Training.** Customized training programs are designed specifically for a particular group of people in a specific organization. They employ problems, situations, and other content that are unique to the target group. They may be self-instructional or require an instructor or facilitator.

**Off-the-Shelf Training Programs.** This form of training comprises programs or packages in a variety of audiovisual formats produced for other organizations or available commercially. They are judged to match the needs of an organization well enough to be used—although they may not fit either the organization or the industry precisely. They may be computer- or media-controlled, trainer-controlled, or require an instructor.

**Decision Strategies and Aids**

Several strategies and aids are available to help HRD managers and trainers arrive at defensible decisions on delivery systems. They range from applying simple rules of thumb to decision templates, decision trees, decision matrices, and computer software.

**Rules of Thumb**

Here the strategy is relatively straightforward. Using a notepad, chalkboard, or easel, the trainer simply considers as many of the factors identified earlier in this chapter as possible, lists the advantages and disadvantages of each delivery system under the conditions existing or envisioned, and arrives at a decision.

**Decision Trees**

The technique here involves framing and answering a series of carefully sequenced questions, usually in terms of "yes" or "no," pertaining to the conditions under which the training is to be conducted and the options available. Answering each question in turn leads the decision maker to a high-quality decision. Portions of two decision trees are shown in Figure 10-1.

**Decision Template**

Foy has developed a template (see Figure 10-2) for choosing a delivery technology that has been an effective aid in explaining delivery choices to executives. It depicts key factors in choosing a delivery system on the left vertical axis from low to high (amount of subject change, student experience, executive involvement, cost per student, and instructor interactivity), and on the right vertical axis, audience size (from large to small). The horizontal axis from left to right depicts the complexity of the subject matter (single subject, multiple function, and general management). The area within the rectangle identifies the options, ranging from self-study (interactive video, CBT, audio, video, and text), work course, traditional classroom, case studies, and interactive TV.
Choosing a Delivery System

Figure 10-1. Portions of two decision trees for choosing delivery strategies.
Foy also identifies two areas as "outside the bounds of education": function or department meetings (at the upper left corner) and an "area of contradiction" (at the lower right corner of the rectangle), about which he says, "A large audience learning general management skills with a low amount of change (C), a low student experience, a low required cost per student, and so on present many contradictions and should lead one to question the validity of the information."

**Decision Matrix**

One of the most useful tools for selecting a delivery system is the decision table. Such tables identify the delivery options on one axis and the factors to be considered on the other axis. Each of the resulting cells of the table contains an adjective, such as high, medium, or low; expensive, moderate, or inexpensive; small, medium, or large. Part of a decision matrix is shown in Figure 10.3.

**Computer Models**

Several computer models are available to assist the trainer in choosing a delivery system. Some operate on mainframes and others on PCs. Typically they employ numerical

Choosing a Delivery System

Figure 10-3. A part of a decision matrix for choosing a delivery system.

<table>
<thead>
<tr>
<th>Delivery System</th>
<th>Systems Development</th>
<th>Systems Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time</td>
<td>Costs</td>
</tr>
<tr>
<td>One-on-One Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individualized instruction</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>OJT/coaching/coaching</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Interactive Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job aids</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Embedded training</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Multimedia</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Video systems</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Computer-based training</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Distance Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correspondence study</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Teleconferencing</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Centralized Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructor-led training</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Learning centers</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Learner-Controlled Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programmed instruction</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Automated learning centers</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Other Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract training</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Customized training</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Off-the-shelf training</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

Values to represent conditions and options. When the numbers are entered into the program, the computer calculates a score for each option considered. The decision maker can then choose from among the options with the best scores.

Xerox Corporation has used a "Computer-Assisted Instruction Selection Guide" to help people determine whether computer-based training is the appropriate medium to meet their training requirements.

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The subject matter is conceptual.
2. The training objectives require computer or computer-related behaviors.
3. Reaching the objective does not require a large attitude change by the
   student.
4. Knowledge and conceptual subjects of the objectives can be represented
   by words or symbols.
5. Reaching the objective does not require complex audio feedback to the
   learner.
6. Decentralized training is important.
7. Standardized training is important.
8. There are considerable variations in student background and experience.
9. The student population is geographically dispersed.
10. More than 30 people will be trained initially.
11. The student population will increase.
12. There is a high turnover rate within the company.
13. The maximum number of students must be trained in the time available.
14. The recording of student performance is important.
15. The content is reasonably stable.
16. The organization has limited funds for travel and accommodations.
17. Qualified instructors are hard to find.
18. There is no fear that the content will fall into competitors’ hands.
19. Use of computers is not actively resisted by the target population.

Katzel has developed software called CBT/Design. Distributed by Pace Row,
Inc., this can compare different delivery systems and training approaches in terms
of the resources required, identify the break-even points between two different delivery
systems in terms of costs and outcomes, and plot the productivity functions relating
costs and outcomes for up to three different training approaches.1 (See Appendix B.)

In-House or Off-Site?

When a decision has been reached to conduct training in one of its conventional forms—
a seminar, workshop, discussion group, or other meeting-room-type learning program—
one of the most important decisions trainers must make is that of location—off-site or
in-house. Some trainers maintain that off-site meetings are invariably the best choice.
They believe that trainees can concentrate on training better away from their office or
workplaces because they are not vulnerable to distractions and interruptions. On the other
hand, when the time, money, and effort expended in planning and holding a training
meeting in a hotel, resort area, or convention center are considered, off-site training
may not be worth the additional investment.

The decision will be much easier to make if several items are considered object-
ively:

- What are the objectives and content of the training? Is the objective to influence,
  inform, or improve individual or team performance? Is the material covered pro-
  prietary in nature? Sensitive? Is the content subject to change?

   28-34.
Choosing a Delivery System

- Are corporate facilities available? Are they large enough to accommodate the number of people to be trained? Are they flexible? Can they accommodate the audiovisual equipment that is to be used? Is operational equipment involved?
- Who are the trainees? Are they top executives, professionals, middle managers, supervisors, technicians, or hourly workers? Does their status in the organization require special arrangements and accommodations?
- How detrimental would distractions and interruptions be? Would participants be more likely to be unpressured, comfortable, relaxed, attentive, and more receptive off-site?
- Where do the participants come from? Are they being brought in from different plants and offices? Are they being punished or rewarded by being required to undergo training? By being in familiar or unfamiliar surroundings?
- What are the costs—the true costs? What is the potential cost in terms of low-participant motivation and morale?

Go Off-Site When:

Team building is the objective
No sensitive information is to be discussed
Corporate facilities are not available or adequate
Participants have special status and requirements
Interruptions would be harmful
Participants would feel punished by being in familiar surroundings
The real or hidden costs are likely to be high

Stay at Home When:

The objective is to develop manipulative skills involving equipment
Sensitive information is to be discussed
Corporate facilities are adequate
Participants have no special requirements
Interruptions would not be serious impediments
Participants would be comfortable and relaxed in the corporate environment
The real or hidden costs are likely to be low

CHECKLIST FOR SELECTING A DELIVERY SYSTEM

Have you:
- Identified and listed all plausible training options for the training system under consideration?
- Compared the merits of the training options: manual, analysis, decision tree, decision matrix, decision model, or computer model?
- Developed or adapted a list of selection criteria, if other than an off-the-shelf model, built and tested the decision tool?
- Used the decision tool to identify the top three alternative delivery systems?
- Convened a panel of experienced trainers to review and discuss the three options?
- Aided the consensus in reaching the delivery system decision?
- If the final choice is conventional classroom/meeting-room instruction, established a list of criteria to determine whether the training will be conducted off-site or in-house?
For Further Reading and Viewing


Choosing a Delivery System

Selecting and Using Training Strategies and Media

Lecture, conference, demonstration, and performance methods have been used in training and development from the beginning. Yet firm criteria for the selection of the optimum method, technique, or medium to achieve training objectives have not been established. Selection of an instructional approach customarily has been dictated by expediency rather than by any other consideration.

The decision to use one strategy or another must be made on the basis of careful analysis of the training situation from several standpoints: training objectives, course content, trainee population, institutional staff, space, facilities, equipment, instructional materials, time, and costs.

Better understanding of how people learn and the evolution of modern aids to teaching and learning have resulted in the development of a great variety of instructional strategies, methods, and systems of organization. This chapter identifies the more important strategies and media, indicates the situations in which they should be used, notes their advantages and limitations, and describes the procedures to be followed in making strategy and media decisions.

Upon completing this chapter, the reader will be able to perform as follows:

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Select the most appropriate strategy for achieving training or development objectives.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions</td>
<td>Given performance objective workcards (Figure 9-2), outlines of course content, information about the trainee input, and the competence of instructors, and data on available space, equipment, and materials, time available for training, and cost limits.</td>
</tr>
<tr>
<td>Criterion</td>
<td>In accordance with the standards and procedures described in this chapter.</td>
</tr>
</tbody>
</table>

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Behavior Select the most appropriate media in complement and support a training strategy used to achieve training or development objectives.

Conditions Given a program of instruction and its supporting lesson plans, outlines of content, basic selection guides, access to a master file of training aids, and the assistance of a media staff specialist.

Criterion In accordance with the standards and procedures described in this chapter.

Nature and Importance of Strategy Selection

Although the terms delivery system, method, technique, approach, and strategy have often been used interchangeably, there are important differences among them. To clarify the meaning of these terms, the following definitions are offered.

Instructional Delivery System. A delivery system is the name given to a separate and unaltered means of providing skills and associated knowledge to an individual learner or group of learners. That is, rather than a combination of systems, one primary vehicle is employed to supply the training. (Examples are one-on-one training, embodied training, video training, multimedia training, computer-based training, correspondence study, instructor-led (classroom) training, programmed instruction, and learning centers; see Chapter 10.) Confusing though it may be, however, a delivery system may also serve as an element of an instructional strategy or as an instructional method; for example, a one-on-one instructional delivery system, such as tutoring, may also be an instructional method. This chapter deals with all instructional methods, including those formerly discussed as delivery systems.

Instructional Strategy. An instructional strategy is a combination of teaching methods and techniques designed to accomplish an instructional goal. It includes mediating devices and media when used, and a system for organizing instructors and trainees.

Instructional Method. An instructional method is the basic approach to instruction. It may be a lecture, demonstration, conference, performance, programmed instruction, study assignments, tutoring, or a combination of two or more of these basic approaches. Methods may be catalogued under these headings:

1. Primary: An approach that is objectively judged to be the most effective and efficient means of attaining an instructional objective.
2. Supporting: An approach that is objectively judged to be an essential complement to a primary method; that is, it must be used in conjunction with the primary method to ensure the attainment of the instructional goal.
3. Alternative: An approach that may be used as a substitute for the primary or supporting method when circumstances do not permit the use of the optimum method.

Instructional Technique. An instructional technique is a means of instruction that complements a method; for example, questioning, handling student responses, and using visuals and auditory aids.
Selecting and Using Training Strategies and Media

System of Organization. A system of organization is a means of grouping instructors and/or trainees for instruction; for example, random grouping, team teaching, and team learning.

Mediating Device. A mediating device is a specialized piece of equipment, or a system, specifically designed to assist in the presentation of instruction; for example, teaching machines, classroom trainee response systems, computer-based instructional systems, and television systems (including video recording and playback facilities).

Media. Media include printed or duplicated materials and graphics, projected still or motion photographic materials, video and sound recordings, and three-dimensional aids and devices.

Importance of Strategy Selection

Except for the selection of training objectives, proper selection of strategy and supporting media will do more to promote efficiency and effectiveness of instruction than any other measure. Strategy must be selected through systematic, objective means if inefficiency in attaining objectives, or, worse, failure to achieve objectives is to be avoided. Two requirements must be met by the strategy selected:

1. Compatibility. There is no single best method of teaching that applies to all learning situations or instructional objectives. The systems designer must choose the strategy that is most compatible with the objectives of the instruction, the nature of the training organization, the facilities and equipment available, the background and level of the trainees, and the abilities of the instructional staff.

2. Variation of Methods. The accomplished instructor has developed skill in using a great variety of methods and techniques. For each objective to be reached, the instructor should select the specific methods that will best carry trainees to the goal. The instructor who is limited in methods often tries to reach an objective by using inappropriate techniques. The results are lack of trainee interest and attention, inefficient learning, and failure to achieve the instructional goals. Too many instructors use only one or two methods. Many instructors feature most of the time. With the great variety of interesting and effective ways that have recently been developed to help trainees learn, the instructor should develop a repertoire of approaches.

Factors in Strategy Selection

Every instructional strategy has certain advantages and limitations. It is essential that careful consideration be given to these advantages and limitations to ensure that the strategy selected for a specific instructional job is the one that will be most effective and efficient. Strategy decisions must be based on careful analysis of the training situation from several standpoints: instructional objectives; course content; trainee population; instructor; instructional space, facilities, equipment, and materials; time; and costs. Each of these factors is discussed here.

Instructional Objectives

The overriding consideration in the selection of a strategy is the objective of instruction, that is, what the trainee will be required to do during a later stage of training or...
on the job. If the objectives of a specific block of instruction deal with job knowledge as supporting elements for the development of terminal behaviors, the strategy selected may be different from the methods chosen to develop job performance skills.

Objectives must also be examined to determine whether the instructional job is (1) to introduce a subject, (2) to provide remedial assistance, (3) to accelerate, enrich, or build academic skills, (4) to teach manual or manipulative skills, (5) to teach concepts, (6) to teach operation and functioning of equipment, (7) to develop teamwork, (8) to stimulate interest, (9) to improve reasoning and problem-solving ability, or (10) to accomplish any one of a host of other objectives that are appropriate for formal training.

Course Content

The nature of the content itself must be considered in selecting an instructional strategy. The stability of the content, whether it is verbal or manipulative, and its difficulty determine to a great extent the strategy that is most appropriate.

Trainee Population

The size, educational level, prior training, aptitudes, maturity, and reading and speaking ability of the trainee group, as well as the teaching location, must be considered in selecting a strategy. For example, optimum conditions for the application of specific methods demand establishment of maximum and minimum class sizes. Where class size exceeds or falls short of the established figure, an alternative method may be necessary.

Instructors

The number, quality, and competencies of available instructors are important factors in selecting a strategy. For example, in a given situation, if technically qualified instructors are not available in sufficient numbers to handle the trainee input, the use of programmed materials, rather than a more appropriate combination of demonstration and practical exercise, may be dictated.

Instructional Space, Facilities, Equipment, and Materials

Each instructional strategy requires the use of specific types of facilities, equipment, and materials. If the required facilities are not available, an alternative method may be dictated. For example, if it has been determined that computer-based training (CBT) would be the most effective medium for the presentation of a block of instruction, but the computer is not available, an alternative approach will be required.

Time

The time available for a particular block of instruction also governs the strategy selected. Conference, performance, and special participative methods demand larger allocations of time than do the lecture and demonstration methods. If time is extremely limited, an alternative in the most effective method may be required.

Costs

The major cost of a program is of paramount importance to any training program. Criteria related to costs are not separate and distinct from other factors. Obviously, time, facilities,
Selecting and Using Training Strategies and Media

personnel, and the like have price tags, but two items are important enough to warrant separate consideration. First, the cost of a strategy must be reasonable when measured against teaching effectiveness. Other factors being equal, if the expected gains in learning effectiveness of a particular strategy do not offset any additional costs incurred by the use of that strategy, a less costly, even if slightly less effective, instructional strategy may be dictated. Second, savings in time, personnel, or facilities must justify the investment in the strategy. Here, the point is that an acceptable relationship between investment in the strategy and savings in other areas must exist. In sum, the cost of the strategy, regardless of its effectiveness, must under normal circumstances be offset by savings in other aspects of the training program.

Basic Methods

Lecture

A lecture is a semiformal discourse in which the instructor presents a series of events, facts, concepts, or principles; explores a problem; or explains relationships. Trainees participate in a lecture mainly as listeners. A lecture is basically a means of “telling” trainees information they need to know. This does not mean, however, that all the talking done by the instructor during a class period can be termed a lecture. The term must be reserved to describe a more formal presentation used to achieve an instructional objective.

Uses. Fundamentally, the purpose of a lecture is to inform. The instructor has information that he or she wishes to transmit to trainees by means of oral communication. Some of the more appropriate uses of the lecture are to (1) orient trainees to course policies, rules, procedures, purposes, and learning resources; (2) introduce a subject, indicate its importance, and present an overview of its scope; (3) give directions on procedures for use in subsequent learning activities; (4) present basic material that will provide a common background for subsequent activities; (5) set the stage for a demonstration, discussion, or performance; (6) illustrate the application of rules, principles, or concepts, and (7) review, clarify, emphasize, or summarize.

Advantages. A properly planned and skillfully delivered lecture is effective when used in appropriate situations. The lecture saves time because the instructor can present more material in a given amount of time than by any other method. The size of a class is limited only by the size of the classroom or the efficiency of the public address system. The lecture can be used effectively in any type of training area, indoors or outdoors. The only requirement is that the trainees be able to hear the lecturer. A skillful lecturer can modify or adjust material in terms of sequence, vocabulary, and illustrations, to meet the needs of a specific group. This makes it possible to present content that is appropriate to the educational level, training, and experience of the class.

Disadvantages. The instructor prepares and presents the material; the trainee sits, listens, and takes notes. Most lectures therefore permit little or no interchange of ideas between the instructor and the trainees. The lecture method is an inappropriate means of attempting to teach skills such as equipment operation. Most such learning takes place through the visual sense, but the lecture, even if supplemented by training aids, appeals mainly to the auditory sense. Unless the content is interesting and challenging
Designing Training and Development Systems

enough to hold the attention of the class, the results are likely to fall short of the instructional goal.

If an instructor is to teach, rather than merely present information, he or she must be aware of trained reactions, misconceptions, maintenance, and difficulties and must remedy them immediately. The lecture method makes these perceptions difficult. Most trainees have acquired the ability to appear attentive, although they may not even be listening. The lecturer receives very little feedback, and much of what is received is misleading.

Conference

In the conference method, group discussion techniques are used to reach instructional objectives. These techniques include questions, answers, and comments from the instructor in combination with answers, comments, and questions from the trainees. Basically, there are three types of conferences: directed discussion, training conferences, and seminars.

 Directed Discussion. The objective in directed discussion is to help trainees acquire better understanding and the ability to apply known facts, principles, concepts, policies, or procedures. The function of the instructor is to guide the discussion in such a way that this knowledge is clearly articulated and applied.

 Training Conference. In a training conference, the objective is to pool the knowledge and past experiences of the trainees to arrive at improved or more clearly stated principles, concepts, policies, or procedures. The issues discussed in a training conference are less likely to have pat answers than the issues talked about in directed discussion. The task of the instructor is to elicit contributions from the group, based on past experiences, that can be a bearing on the issue at hand. Balanced participation then is the goal.

 Seminar. The purpose of the seminar is to find an answer to a question or a solution to a problem. The instructor does not have an answer or a solution; in fact, there is no known best or correct solution. Rather, he or she is seeking an answer and uses the group to develop one. The primary functions of the instructor are to (1) pose the problem and encourage free and full participation in a discussion aimed at (2) identifying the real problem, (3) gathering and analyzing data, (4) formulating and testing hypotheses, (5) arriving at conclusions, and (6) making recommendations to support or arrive at a solution or decision.

Uses. The conference method is used (1) to develop imaginative solutions to problems, (2) to stimulate interest and thinking, and to secure trainee participation in situations that would otherwise allow the class to remain passive, (3) to emphasize the main teaching points, (4) to supplement lectures, readings, or laboratory exercises, (5) to determine how well trainees understand concepts and principles, and to determine whether they are ready to proceed to new or more advanced material, (6) to prepare trainees for the application of theory or procedure to specific situations, (7) to summarize, clarify points, or review, (8) to prepare trainees for instruction that is to follow, and (9) to determine trainee progress and the effectiveness of prior instruction.
Advantages. Given the opportunity to apply knowledge in a realistic situation, the trainee develops confidence in his or her ability and a positive attitude toward the learning situation.

Active trainee participation is maximized. This fact, coupled with the interest and attention generated by putting theory into practice, increases both the amount and the permanence of learning. With the performance method, the instructor has an opportunity to observe the degree of learning attained by each trainee, to locate trainees who have difficulty, and to determine whether there have been weak areas in the instruction.

Because performance is guided, trainees are less likely to make mistakes that will damage equipment or waste material. Guided performances make it possible to emphasize the proper method of performance and enables prevention of accidents.

Disadvantages. If a practical exercise is to be conducted, every trainee must participate fully. Therefore, tools and properly functioning equipment must be available in sufficient quantity for the size of the class. Setting up the room and equipment, for individuals or teams, or performance on the complete operation of a well-run practical exercise, is often time-consuming. Unless the class is very small, several well-qualified instructors are required in order to keep a constant check on the progress of each trainee and to give assistance when needed, and to evaluate the quality of the performance.

Programmed Instruction

Programmed instruction is a method of self-instruction in which the trainee works through a carefully sequenced and paced series of steps leading to the acquisition of knowledge or skills representing the instructional objectives. Trainees proceed through the program at their own rates, respond actively (or covertly) to each step in the sequence, and receive immediate feedback on the correctness of responses before proceeding to the next step. Programs are usually designed to permit the trainee to master the desired knowledge or skills.

Uses. Programmed instruction is used (1) to provide remedial instruction, (2) to provide makeup instructions for late arrivals, absences, or transients, (3) to maintain previously learned skills, (4) to provide training on equipment and procedures that have become obsolete, (5) to upgrade production, administrative, or other types of skills and knowledge, (6) to accelerate capable trainees, (7) to provide a means (advance study) of ensuring enough common background among trainees so that they can profit from formal classroom work, (8) to provide the review and practice of knowledge and skills needed in a specific field of study, (9) to provide vertical enrichment (advanced work) or horizontal enrichment (broader contacts) to a content area, and (10) to control the variables in a learning situation for experimental purposes.

Advantages. Programmed instruction reduces the failure rate. Basically, this is due to the facts that programs are tested and validated before they are used. The self-paced nature of the material also helps because trainees are exposed to the material at a rate that is appropriate for the individual. The forced-response and immediate feedback features guarantee continuous attention to the material, provide corrections for wrong responses, prevent misinterpretation, and prevent the trainees from continuing to practice errors. The rigid control over content made possible by the procedures used for devel-
opining, testing, and validating programs prevents the introduction of unnecessary content and thereby reduces the time required to learn the critical material.

The instructional content and sequence of a program are predetermined. They are not subject to the whims, preferences, experiences, or biases of the instructor. The quality of the instruction does not vary from day to day or from instructor to instructor. There is almost complete control over the content, the sequence, and the form of trainee response. Programmed materials can be used anywhere at any time. No specially equipped rooms or facilities are necessary. Programs can be designed to accommodate wide differences in aptitude, ability, speed of learning, prior training, and experience. The size of a class is also unimportant. In addition, programs free instructors from routine, repetitive teaching tasks, and enable them to spend a larger part of their time on more difficult or more demanding aspects of instruction.

Disadvantages. Programs, whether developed locally or contracted for, are extremely costly. For local development there must be a large investment in programmer training and an even larger one in program writing, testing, and validation. Contract program development is expensive in terms of dollar outlay and in terms of the time required by subject-matter experts and technicians for consulting with programmers and reviewing draft materials. Programmed materials cannot be selected or developed overnight. A considerable amount of lead time is required to screen and select appropriate programs from those available. If programs are developed either by staff and faculty or by contract programmers, the lead time for production, testing, and validation is even greater. If the course content is unstable or subject to frequent and radical change, it is inappropriate for programming.

The use of programs requires a trainee group that is mature enough and sufficiently well motivated to work more or less independently. Furthermore, the trainee must possess reading ability at the level required for full understanding of the program. The use of programmed materials creates unique administrative problems; foremost among these are the scheduling and assignment problems caused by the self-pacing feature of programs. This feature results in different phase and course completion times, with consequent difficulties in scheduling subsequent instruction and in assigning graduates to operating units.

Study Assignment

In the study assignment method, the instructor assigns readings in books, periodicals, manuals, or handouts; requires the completion of a project or research paper; or prescribes problems and exercises for the practice of a skill. This method involves imposing a task, providing for trainee motivation, and giving general directions for carrying out the assignment. The study assignment has two basic forms: (1) independent study, where the trainee carries out the assignment without instructor assistance or direct guidance, and (2) supervised study, where the trainee carries out the assignment with an instructor available for guidance and assistance.

Uses. The study assignment is used (1) to orient trainees to a topic prior to classroom or laboratory work, (2) to set the stage for a lecture, demonstration, or discussion, that is, to serve as advance study, (3) to provide for or capitalize on individual differences in ability, background, or experience through differentiated assignments, (4) to provide for the review of material covered in class or to give the practice essential for
the development of skills and problem-solving ability, that is, to serve as homework, and (2) to provide enrichment materials.

Advantages. A far greater amount of material, and detailed assessment of it, can be covered in a shorter period of time by study assignments than by any other means. Used properly, assignments can serve as a substitute for lectures, or by providing a common body of knowledge, they can make lectures, demonstrations, and conferences more meaningful and more productive. Practice is essential to the development of skills. Assignments provide a means of giving enough practice to ensure mastery of the skill. Study assignments can be designed to make use of the experience, special skills, or interest of trainees, or to remedy individual deficiencies in knowledge or skill.

Disadvantages. If trainees are not well motivated, they are not likely to do a thorough job on assignments, especially those that they must do on their own. The instructor must plan and assign work in such a way that the objectives are clear, the instructions are lucid, and the motivation is present; and he or she must follow up assignments to ensure that they have been carried out. In skill development it is critical that the skill be practiced in the prescribed mode. When independent practice, there is a particular danger that the trainee will practice an incorrect procedure or error. When this occurs, a large expenditure of time is required for "unlearning" the skill and "re-learning" it correctly.

Tutoring

In tutoring, an instructor works directly with an individual trainee. The method may involve exposition, demonstration, questioning, coaching, or guided practice.

Uses. Tutoring is used (1) to teach highly complex skills and operations, or operations that involve considerable danger to personnel or hazards to expensive equipment, and (2) to provide individualized remedial assistance.

Advantages. With a competent instructor, tutoring provides the optimum in individualized instruction. The needs of the individual trainee can be diagnosed, and instruction can be tailored to his or her unique needs. In a tutorial setting, the highest possible degree of trainee participation can be achieved. Direct involvement in the learning, by answering and asking questions, and by performing under supervision, is guaranteed. The ability of the tutor-coach to adapt instruction to the needs of the individual, together with the trainee's high degree of interaction and participation, makes this method extremely effective in achieving instructional objectives. The one-to-one instructor-trainee ratio provides close control over performance of hazardous operations, resulting in the prevention of injury to the operator or damage to the equipment.

Disadvantages. Tutoring is one of the most demanding types of instruction to conduct, as it requires complete mastery of the content as well as skill in diagnosing and remediating learning difficulties. Tutoring is probably the most expensive method of teaching. Although only one trainee is receiving the instruction, the instructor's preparation and presentation time are essentially the same as they would be for a whole class of trainees.
understanding of the viewpoints and feelings of others, (4) develop skills in problem diagnosis, (5) develop insights into personal attitudes, values, and behavior, (6) discover how trainees might react under certain conditions, and (7) develop specific interpersonal or communication skills.

Advantages. By playing the roles of others, trainees become aware of what these roles mean to other people. Role playing also underscores the difference between verbalizing about actions trainees claim they would take in a situation and what they would actually do. This results in greater understanding of personal traits, feelings, attitudes, values, and abilities. The reduction of inhibitions, the spontaneity, and the "no penalty" features of role playing allow trainees maximum opportunity to discover new modes of acting. In role playing, trainees can also experiment with several approaches, whereas in a real situation, they can try only one. Trainees also have the chance to observe and imitate others. Finally, role playing is an attention-getter from the outset. It practically guarantees the interest of the observers as well as of the participants.

Disadvantages. Role playing takes a considerable amount of time from the standpoint of trainee preparation, performance, and follow-up discussion. Without competent leadership, role playing is a waste of time. At its worst it can be completely destructive to the personnel involved and to the training program. Trainees may become resentful when they receive feedback from the group on their portrayals. Some trainees may be too embarrassed to take part; others may grandstand. Other capable instructors can prevent these extremes in behavior. Last, roles played by trainees have no necessary relation to actual practice; therefore, trainees may feel no responsibility for playing their roles realistically.

Sensitivity (Laboratory or T-Group) Training

Sensitivity training in any one of its several forms is a deliberate effort to apply behavioral science to problems of motivation, communication, problem solving, and team work. Basically, sensitivity training is small-group interaction under stress in an unstructured group composed of learners and a trainer. The objective is behavior change. To attain the objective, a permissive or supportive environment is established by the trainer. Participants are encouraged to act their own roles, receive feedback, examine their concepts of self, experiment with and practice new patterns of behavior, and learn how to maintain changed behavior back on the job.

Uses. Sensitivity training is used to develop better managers, supervisors, or leaders, to develop the skills and insights of effective group membership, to help trainees to understand themselves and others, to improve communication skills, and to help trainees to be able to contribute to the work of a group.

Advantages. In addition to those advantages listed for role playing, sensitivity training allows trainees to gain new insights into their ways of perceiving, feeling, and behaving. The technique opens up the potential for trainees to change their attitudes and behavior by surfacing tendencies to resist change. Mistakes in relating to others and in behavior can be made without penalty to the trainee or to the organization.

Disadvantages. Sensitivity training is usually conducted away from the workplace. One- to three-week concentrated, continuous, residential sessions, with no inter-
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...ruptions, is the typical arrangement. Time away from the job and fees, travel, and living expenses add to the total cost. Neurotic trainees who are unable to withstand stress are likely to suffer temporary and in some cases severe and permanent psychological or emotional damage. Employees should not be required to participate in sensitivity training against their will. Forced participation could be considered an invasion of privacy. Indirect pressures, such as granting rewards of promotion, prestige, or status to those who have completed the training, constitute subtle coercion.

Games

Originally developed for business and military training, games are used in a variety of training programs in business, educational, and government organizations. Most games focus on general management principles; however, some games aim to teach specific techniques. Game applications include human relations training, war games, research problem solving, executive testing and selection, marketing, inventory control, and management development.

Some games are simple; others require data-processing equipment. However, the distinguishing features of a game are that they include a set of simulated decision-making tasks typical of a real-life situation and that they provide a systematic means of observing and evaluating trainees' decisions. These, then, are fed back to the trainees so that they can judge their appropriateness. Most games are played by one or more teams, each composed of from 1 to 30 participants. There may or may not be interaction between teams. Games are usually played in periods—usually intervals of time that may represent a month, a quarter, or a year. Trainees are given information in the form of reports or a scenario and allowed time to study the situation and make decisions. These decisions are processed either by a computer or by a computer. The resulting costs or scenario projections are returned to the team for analysis and another decision.

Uses. Games are used to develop leadership skills, to improve technical performance, to foster cooperation and teamwork, and to improve decision-making ability. They can also help trainees hone their analytical skills, develop insights and perceptions, and practice skills taught in a training program. [Selected sources of games are listed in Appendix B.]

Advantages. The fact that long periods of time can be compressed into relatively short training periods makes it possible to provide in weeks the experience that would take years to gain on the job. Participants become deeply involved in the game and undergo the stresses associated with real situations. Games can be used in an infinite variety of ways for all types of training, from orientation to detailed instruction, and games can often be used more than once with the same group with additional gains.

Disadvantages. Games usually cost more in terms of personnel, equipment, and money than other approaches to training. And where a computer is involved, the cost can be even greater—for programming, time on the equipment, and operating personnel.

Simulation

In simulation, devices, equipment, or systems called simulators replicate or imitate a real system. They assume the appearance, characteristics, or capabilities of the real...
device, equipment, or system. They range in complexity from simple microcomputer programs that teach trainees how to manipulate the switches on a control panel to full-motion versions that look and act like the real equipment—complete with visuals and high-fidelity sound. More elaborate systems make use of micro- and minicomputers, videodisc players, projectors, lasers, and large video screens.

In the not-so-distant past, simulation in technical training meant expensive (multi-million-dollar), full-motion replicas of equipment and systems. As a consequence, their use was limited to training involving high-cost, high-risk skills and equipment—such as piloting aircraft and ships. So most simulators were found in military and civilian flight-training centers and military weapons systems training facilities. For example, flight simulators have been used for many years to train military and commercial pilots. But, today, microcomputers are bringing high-fidelity, affordable, and highly effective simulators into the training arena.

The newest breakthrough in simulation is called artificial or “virtual” reality. This innovation consists of computer-generated systems that create artificial environments through the use of real-time graphics and animation technology. Using sensing and interface devices (such as stereoscopic headgear, fiber-optic helmets, and eyephones) and software (such as data/suit and tracking equipment), the systems create three-dimensional, directly interactive environments that immerse users in worlds that appear real and that allow them to interact with those worlds. The complexity and cost of such systems currently preclude their widespread use.

Uses. Simulators are used in business, industrial, transportation, nuclear, military, medical and surgical, fire-fighting, and law enforcement training to teach complex technical, mechanical, operational, and decision-making skills—skills that involve life-or-death situations, hazards to expensive equipment, or danger to the trainees themselves.

Advantages. Simulators are usually just as effective and much less expensive than training people on real equipment and systems—often in terms of the time the simulator is used as a substitute for the real thing in training and sometimes in terms of manufacturing or fabrication costs of the simulator as compared with the real item. It is also much safer to the trainee and the equipment to allow trainees to make mistakes while operating in a simulated environment than in the real situation. And it is possible to expose trainees to simulated situations that would pose danger to their very lives if practiced in the real environment. In addition, the wide availability of powerful and locally programmable computers has opened simulation to many companies with modest training budgets.

Disadvantages. Although the simulator hardware may be relatively inexpensive, the programming needed to produce an effective simulation is both complex and time-consuming. Sometimes it is impossible to provide the level of fidelity in the system that is required to make the training effective. In certain situations simulators have proved to be much less effective with trainees who have had no experience with the equipment or system than with those who have; journeymen rather than beginners profit more.

In-Basket Exercises

The in-basket situation is composed of a representative sample of a month’s or even a full year’s performance in all aspects of a job. Trainees are given background materials,
organization charts, policy manuals, financial statements, reports, and position papers to study before the exercise begins. Each trainee is then exposed to a structured array of memos, reports, letters, telephone calls, visits, and meetings. In the role of manager, the trainee makes decisions on the incoming "mail." In each instance the trainee commits himself or herself in writing to specific courses of action. Time limits are established to introduce realism and cause stress. The decision-making phase is followed by discussion and critique of the actions taken and decisions reached. All actions are analyzed, evaluated, and fed back to participants.

Uses. In-basket exercises are primarily used in supervisory and management development. In this context they are used to analyze trainees' decision-making abilities so that needed training can be provided, to evaluate managerial skills, to provide practice in decision making, and to improve trainees' understanding of management decisions.

Advantages. In-basket exercises are challenging and fun. They are popular with trainees because they stimulate their interest and force their involvement. Trainees are more likely to behave naturally under in-basket conditions than in other types of training situations, therefore, strengths and weaknesses in decision making can be identified and remedied. Behavior samples representing months or even years of performance can be obtained in a short period of time. Because they demand individual decision making, in-basket exercises can be appraised fairly and objectively.

Disadvantages. In-basket exercises are expensive to construct, administer, and evaluate. Materials, personnel, and time are all part of the total cost to the enterprise. The manner of effectiveness in achieving training objectives has not yet been answered conclusively.

Brainstorming

Brainstorming, also called free-association, idea or, creative problem solving, a small, carefully selected group is given a "how to" question or problem and is asked to produce as many ideas or solutions as it can generate. Usually a time limit is set. Free association is encouraged. Quantity of ideas or solutions takes precedence over quality. Judgments about the worth of ideas or solutions are deliberately postponed until a later time. Ideas are written on a chalkboard or flip chart as fast as they are stated.

Uses. Brainstorming is used to develop novel or creative solutions to problems, to develop creativity, and to stimulate the participation of trainees.

Advantages. Although only 10 percent of the ideas produced by a brainstorming session are likely to be usable, this represents a significant number of valuable ideas. The fast-moving pace of a brainstorming session is also inherently interesting.

Disadvantages. The leader must set the stage for a productive session. He or she must ensure that participants understand their roles. The leader must keep the session moving and the ideas coming. These functions require considerable skill. Probably not more than fifteen people can participate effectively in a brainstorming session. The
productivity of the group depends on the abilities of the participants and their understanding of the process.

**Buzz Sessions**

Buzz sessions, also called huddle groups and Phillips 66, are frequently used in conjunction with lectures or case problems. A larger trainee group is subdivided into units of six. Each group is given a problem and allowed six minutes to discuss it and be ready to report its conclusions to the total group.

**Uses.** The buzz session is used to make possible the exchange of experience and the sharing of ideas in a large group; to identify questions, issues, and problems that members of a large group may wish to have considered; to obtain the contributions of resident trainees; to gather suggestions from the group for improving learning activities; and to evaluate problem solutions.

**Advantages.** Although the trainee group may be very large, the technique permits all to participate, either as leaders of a small group or as discussants. Lectures and case discussion are more effective when the speaker or leader obtains feedback from the total group.

**Disadvantages.** The leader must be able to organize the groups quickly and get them working on the problem without wasting time. Leaders sometimes fail to do this. Groups often consume all the time available in selecting a leader and a recorder. Six minutes is not enough time to consider problems in any depth. Only well-defined and relatively straightforward problems or issues can be handled.

**Field Trips**

A field trip is a carefully planned visit or tour to a place away from the training activity. The purpose of the trip is to provide firsthand observation of objects, processes, operations, and situations not transportable to, or reproducible in, the training facility. The field trip may take less than an hour when it involves a visit to an adjoining plant, office, or shop; or it may consume several days or weeks, as would be the case with a visit to a distant plant or an overseas installation.

**Uses.** Field trips are used (1) to provide firsthand observation of operations, processes, or practices that cannot be readily brought into the classroom, shop, or laboratory; (2) to stimulate trainee interest and participation in discussion or other types of follow-on learning activities; (3) to gather information for later use in training activities; (4) to relate theory to actual practice; and (5) to introduce or summarize a topic.

**Advantages.** Information provided to trainees firsthand is real and concrete. Objects, processes, and operations are seen in their true surroundings—in three dimensions and in natural color. Because the interest level is high and all the senses are used, the result is greater understanding and more permanent learning.

**Disadvantages.** Trainees must be prepared for the field trip. Coordination must be effected with the manager of the facility to be visited to prevent interference with
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operations. To ensure that trainees see what is intended and in the right sequence, and to make certain that safety precautions are taken. Except for brief visits to installations close by, a considerable amount of time is consumed in travel. Added to this are the expenses of transportation and living accommodations.

Panels

With panels, three to ten people, under the direction of a moderator, present their views on a particular subject or problem, or present assigned phases of a broad topic. Usually, panelists represent different kinds of expertise, experience, or perspectives. Often they are drawn from operating and staff elements. At times experts from outside the enterprise are invited to participate. Sometimes trainees themselves serve as members of panels. Following the presentations by the panelists, trainees are encouraged to participate through questions directed to individual panelists.

Uses. Panels are used (1) to identify and explore unsettled issues or problems, (2) to present differing points of view on an issue or problem, (3) to identify and clarify the advantages and disadvantages of a course of action, (4) to make use of special knowledge, experience, or expertise, and (5) to develop interest in a particular topic or problem.

Advantages. With large groups the panel permits a degree of trainee participation otherwise impossible to achieve. The presentation of varying points of view and the differences in the personalities of the panelists make the panel an interesting method 1; introduces variety into the training program.

Disadvantages. Without expert leadership, little value cannot be obtained from the panel. The moderator must have a thorough understanding of the subject, be able to handle the panelists, and be able to stimulate group participation. Panelists must be selected carefully to ensure that they are effective communicators. Lack of planning often results in panelists being unprepared, superficial in their coverage, or unable to limit their remarks to the subject at hand.

Group Interviews

A group interview is a 30- to 50-minute dialogue between an expert and a group of trainees. For example, a line manager might be invited to answer questions from a group of team leaders training about union-management relations. Questions are posed to explain various aspects of the topic. Interviewers are informed in advance of the kinds of questions they will be asked.

Uses. The group interview is used to clarify issues and problems; to analyze problems; to obtain authoritative information, opinion, and impressions on an issue or problem, and to set the stage for follow-on activities.

Advantages. Having trainees ask questions ensures that the material covered will be in keeping with their needs. Some people prefer to be interviewed rather than to deliver a lecture. Advance preparation can be held to a bare minimum, since the guests...
is already an expert in the area to be investigated. In addition, the interview is flexible; the interviewee can be asked to expand, clarify, or give examples.

Disadvantages. The group interview does not permit detailed presentation of information. Instead, short, to-the-point answers are desired. The development of information in a readily understandable sequence cannot be guaranteed. The questions of the trainees often wander over the whole subject or concentrate on one narrow aspect of the topic.

Types of Trainee and Instructor Organization

Random Grouping and Assignment

Random assignment of trainees and instructors is an organizational approach in which more or less heterogeneous groups of trainees are assigned to class sections, and the responsibility for conducting instruction is shared by instructors assigned to one or more training elements. The size of the class is determined mainly by available facilities, including such considerations as seating capacity or the number of equipment positions on hand. Qualified instructors are usually assigned on a chance or duty roster basis.

Uses. Although there are relatively few situations in which random assignment should be used, it can be used under the following conditions:

- Prerequisites for enrollment in a course are sufficiently well defined and applied to ensure the assignment of trainees who possess the basic aptitudes, abilities, education, prior training, or experiences essential to successful progress in the course.
- Standards of instructor qualification, in terms of both technical knowledge and teaching skills, are set high enough to ensure an acceptable level of teaching competence among all instructors.
- The content to be presented is completely new to the trainees and is presented primarily as an orientation or introduction.
- The accomplishment of the objectives of the instruction depends on a great variation in the backgrounds and experience of the trainees; for example, some aspects of problem solving.
- A wide range of abilities, aptitudes, education, training, and experience is of little consequence; for example, introductory materials or orientations.

Advantages. With this system, scheduling and assignment of trainees and instructors are relatively uncomplicated. It simply involves matching classes with instructors, training space, and equipment. Variables that must be taken into account in other forms of organization can be ignored. Although planning for any subject in a course cannot be undertaken without reference to other blocks of instruction in the same course, there is less need for cooperative planning by all instructors under the random system.

Disadvantages. Regardless of the rigidity of prerequisites for enrollment in any training program, wide variations in trainee aptitude, ability, education, training, and experience are unavoidable. Although the level of the instruction may be set in terms
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of the prerequisites, the instruction will be dealing with the mythical 'average' student.

The level may be too high and the pace too fast for some, and it may be too low and opposite for others.

Homogeneous Grouping

A homogeneous group is characterized by uniformity in achievement, ability, aptitude, background, education, training, or experience. The practice of grouping on such basis is now called tracking. With this type of grouping, trainees are assigned to a class on the basis of selection instruments or devices that indicate that they are alike in specific attributes, traits, or abilities. Although it cannot be assumed that they are undiversified solely on the selection factor, a narrower range of diversification is established. Note that even with a group composed of trainees who have scored identically on an aptitude test, there will be differences among that group in that aptitude (because of errors of measurement), but there will also be variations almost as great as in a randomly selected group on any other selection factor, such as ability, experience, or prior training.

Some experts and researchers now maintain that homogeneous grouping damages the self-esteem and motivation of trainees placed in lower-ability groups. Others say that it creates a caste system in training. Still others maintain that ability grouping is appropriate in mathematics, science, language, and other highly technical areas, where past experience and current accomplishments, as well as skills levels, are critical to success—or where a logical progression is followed by the subject matter.

Uses. Homogeneous grouping is used (1) to provide remedial assistance to trainees, (2) to provide a means of accelerating trainees who are fast learners, thus enabling them to complete a course of instruction more quickly, and (3) to provide (a) more able, or more experienced trainees with more advanced work in a subject or broader contact with a content area.

Advantages. The reduced variability of the group makes it possible for the instructor to present content and to use strategies that are most appropriate for the ability, attitude, education, training, or experience of the group. It also enables the instructor to pitch instruction at the proper level and pace for the group.

Disadvantages. For homogeneous grouping there must be an investment of time and money in selecting and using screening techniques and devices. Selection of trainees on the basis of one similarity does not mean that the trainees are similar in all other traits and abilities. If a combination of traits and abilities is needed, it is extremely difficult to achieve any realistic degree of homogeneity.

Cooperative Training

Also called collaborative learning, cooperative training focuses on group or cooperative efforts among instructors (faculty) and trainees (students) to achieve learning objectives. It emphasizes interaction and participation through dialogue aimed at idea and information sharing. From the standpoint of trainees, it works this way: Trainees work in small, heterogeneous groups to help one another learn.
Uses. This approach to grouping may be used with most subject-matter areas, but it is probably most effective in problem-solving situations. However, successful learning in this mode requires seven conditions: (1) instructors must receive training; (2) trainees must be properly prepared; (3) groups must number no more than five members each; (4) trainees must develop the motivation and be provided the opportunity to help one another learn; (5) trainees must accept responsibility for and accountability to the group as well as to themselves for doing their best; (6) trainees must acquire the social skills needed for effective cooperative work; and (7) trainees must be rewarded or recognized for the group's attainment of a set level of average performance on tests of individual achievement and for improvement over past performance.

Advantages. Cooperative learning groups are said to inspire enthusiasm and cooperation as well as promote self-esteem and healthy competition and thereby provide the best possible learning conditions. Researchers maintain that it works best when trainees work together in groups with the brighter trainees helping the less able and thereby reinforcing their own learning.

Disadvantages. The conditions essential to the success of cooperative learning are difficult to fulfill. Furthermore, critics argue that cooperative training or poor teaching "uses" or exploits the brighter trainees and steals from their learning time.

Team Teaching

Team teaching is a system of organization utilizing a team of two to eight instructors. One member is designated as the team leader and the others, who represent a range of subject matter and teaching competencies, jointly plan, conduct, and evaluate all learning activities for a relatively large group of trainees. The total training group may be taught simultaneously for some lessons and divided into smaller groups for other instruction.

Uses. Team teaching can be used with any type of content, at any level, and for any instructional purpose. However, it is used primarily to handle large and diversified groups of trainees efficiently, to maximize the use of available instructor knowledge and skills, and to provide a means of dealing with individual differences in trainee achievement, ability, aptitude, educational level, prior training, and experience.

Advantages. Improved instructional effectiveness is enhanced by the cooperative planning of a team of instructors. Instruction is given by the most technically qualified instructor. The best method for reaching the objective is used. There are increased opportunities for trainee participation, and attention can be given to individual differences. Team teaching permits maximum utilization of the talents of instructors. Instructors are assigned tasks commensurate with their technical knowledge, experience, and teaching skills. Routine teaching and administrative tasks can be assigned to less skilled members of the team, thereby reserving the highly skilled instructors for more demanding instructional jobs. This system of organization permits variations in both the size of trainee groups and in the length of instructional periods. Trainees can be regrouped in accordance with their needs. The result is a degree of flexibility and responsiveness difficult to achieve with most other approaches.
Disadvantages. The success of team teaching depends on the quality of planning. Time must be available prior to and during the course for coordination and planning by members of the team. Instructors serving as members of a team must be able to work effectively with the other members; they must know their jobs, know what other members of the team are doing, and be able to interact with them. Because team teaching has not been used to any great extent in industrial training; the roles of team members must be defined, and training in performing these roles must be provided to each member.

Team Learning

Team learning is a form of organization in which a group of trainees, under one instructor, is subdivided into smaller groups or teams for instruction. Under the supervision of the instructor, these teams engage in learning activities of a variety of types aimed at the development of verbal and manipulative skills.

Uses. Team learning can be used as a means of achieving many types of instructional objectives, for any group, and with any content. Primarily, team learning is used to handle individual differences in trainee achievements, ability, aptitude, educational level, prior training, and experiences; to teach team skills; to provide guided practice in developing verbal or manipulative skills; and to develop problem-solving ability.

Advantages. Team learning enhances the effectiveness of instruction because it employs a variety of methods, emphasizes trainee activity, and provides for individual differences. This form of organization permits changes in the size and composition of subgroups to meet the needs of the individual. Time can also be allocated to activities as needed. Although all activities of the group are planned with the guidance and assistance of the instructor, the group and subgroups teach themselves. There is less formal presentation by the instructor.

Disadvantages. A team-teaching instructor must have mastery of the subject matter, be proficient in the skills being taught, and be accomplished in carrying out all methods and techniques of teaching. Few instructors have had the training and experience required to use this system successfully. The graduates of a course operated under the team-teaching concept are likely to show a great amount of variation in terms of job knowledge and proficiency because no two trainees have been exposed to identical content or learning experiences.

Mediating Devices

Teaching Machines

A teaching machine is any mechanical, electrical, or electronic device that provides instruction to a trainee without the direct participation of a human instructor. Devices of this type simulate, in one way or another, the functions normally fulfilled by an instructor. They contain instructional material, present it in steps, provide a means for the trainee to respond, and provide the trainee with immediate information regarding the
correctness of his or her response. In addition, some machines perform the following functions:

- Discriminate the correctness of the trainee's response.
- Automatically advance the program.
- Provide random access to teaching frames.
- Retain those frames on which errors have been made for further presentation.
- Record and tabulate correct and incorrect responses.
- Select and present content on the basis of evaluation of previous responses.
- Permit two-way communication between trainee and machine.

The media used include printed material, projected material, visual or audio signal, or a combination thereof. The response medium may be pencil, stylus, typewriter, key, lever, push button, switch, light gun, the spoken word, or any appropriate combination.

Uses. Teaching machines are used (1) to supplement other instructional methods of teaching by providing a means of advance study, practice, remedial work, makeup instruction, review, maintenance drill, acceleration, or enrichment material, (2) to substitute for conventional methods in teaching facts, concepts, principles, or skills, and thereby relieve the instructor of repetitive or routine teaching tasks, (3) to control instructional materials during the development and validation stage, and (4) to ensure complete control over the sequence of instruction, the form of trainee response, and the immediate correction of errors.

Advantages. Cadegry is extremely effective in engaging and holding trainee attention. Witness the popularity of video-game arcades. Although prolonged use of teaching machines may result in a deterioration of trainee interest, this occurs at a slower pace than with more conventional methods. With a machine, the activity of the learner—whether writing, speaking, or manipulating levers and buttons—is ensured. When the trainee stops responding, the instruction stops. Because the material in a machine is programmed and self-paced, it has the same capacity as programmed instruction for reducing failure rate, for raising end-of-course proficiency, for reducing course completion time, and for standardizing instruction. A reliable and well-designed machine with a fully validated program does not require an instructor, thus freeing instructors for more difficult and demanding types of teaching.

Disadvantages. Machines are expensive in terms of capital outlay and often in terms of maintenance. Frequently, it is necessary to reproduce a program in a format acceptable for an available machine. This is an expensive and time-consuming process. The problems of scheduling and assignment caused by the self-pacing feature of programmed materials are just as serious with teaching machines as they are with book format programs. Added to these are the unique storage, maintenance, and repair problems of machines. For these reasons, they have largely been replaced by computer-based training or multimedia.

Trainee Response Systems

A trainee response system is an electrical or electronic means of establishing two-way communication and interaction between an instructional program (or an instructor) and
Selecting and Using Training Strategies and Media

Trainees. Systems of this type are designed to be used by the classroom instructor in conjunction with mass media, such as motion pictures and video, and magnetic tape recordings, lectures, and demonstrations. Periodically throughout the presentation, all trainees in the group are simultaneously asked to respond to questions. Responses may be recorded on punched cards or paper mills, which are automatically advanced before the correct answer is given. Multiple-choice questions may be handled by depressing keys. In this way, response data are recorded and tabulated, and the trainee receives immediate feedback from the instructor or by means of indicator lights. Similarly, the instructor can have his or her teaching effectiveness immediately evaluated, at any time, by means of error counters or meters that indicate the percentage of correct responses to his or her questions.

One such response device, the DATA-BACK System, provides a network of easy-to-use response terminals that allow meeting, symposium, teleconference, or classroom attendees to participate actively, express opinions, and answer specific multiple-choice questions. The system operates via a standard microcomputer with the ability to communicate with thousands of on-line participants—at a single site or multiple sites. While standard software packages are available, programming can be customized to meet user needs.

The 20-key multifunction terminal is the communication link between program content, its receipt by the audience, and the resulting immediate feedback of audience comprehension. Responses are entered on demand or in a self-paced mode, summarized, and are immediately available for display in a variety of forms. Both individual and group response data are stored for later review and analysis. (See Appendix B.)

Uses. Trainee response devices combined with lectures, demonstrations, audio- or videotape recordings, or the mass media may be used to replace an instructor or as an aid to instruction. In the former instance the equipment is used in its programmed mode; it prerecords all audio and visual stimuli, including questions, and maintains control of the presentation. In the latter instance the instructor provides control over the sequence, pace, and coverage of the material.

Advantages. Because instruction is carefully planned and preprogrammed, it is more effective. In addition, when the trainee response device is used as an aid to instruction, the instructor receives immediate and specific feedback from the trainees as necessary, throughout the lecture or demonstration. He or she can then improve the presentation by clarifying points that have been misunderstood. The requirement for periodic individual responses to questions by means of the response device enhances trainee attention, provides immediate feedback, and thereby improves learning.

The size of the group that can be handled is limited only by the number of response devices installed in the classroom. In its automatic programmed mode, the equipment can present the same material, in the same sequence, to many groups of trainees.

Disadvantages. Instructors must not only be highly skilled lecturers or demonstrators; they must also ask effective diagnostic questions, and clarify, on the spot, any misunderstandings. In short, they must be fluent and flexible. Because these devices are costly, they must be used frequently and judiciously if an appropriate return on the investment is to be realized. Instructors must be trained to ensure that lectures and demonstrations are programmed for effective presentation, and that questions are prop-
Wright framed, developed well in advanced, and inserted at the proper point in the instructional sequence.

Keypad and Keyboard Systems

Sometimes called group decision support systems, keypad and keyboard systems are essentially communication techniques designed to make meetings more interactive. Keypad systems work this way: Each participant is given a 10-digit keypad wired to a computer. During the meeting the leader or trainer asks questions, such as, "On a scale of 10, which of the following represents the best option to solve this problem?" Participants respond by pushing the buttons that correspond to their choices. The computer processes the responses and displays them on a matrix on an overhead projector equipped with a liquid crystal display (LCD) panel.

Keyboard systems are similar to keypad systems but allow more flexibility. Each participant has a typewriter-like keyboard and personal computer that is linked to other computers through a network. With the keyboard, participants can type words or narrative, and not just numbers. That allows them to brainstorm in response to open-ended questions such as, "What is the real problem here?" Participants can answer when they want to, and how they want to, and do so independently of everyone else. But, as they view results on their individual monitors, they can discuss, consolidate, categorize, and prioritize and sequence their ideas. Some systems include tailored electronic mail and computer-conferencing capabilities so that participants have access to data bases and other applications already in the network.

Uses: Keyboard and keypad systems are primarily used for problem-solving meetings and conferences. They are a means of stimulating interest and participation and getting feedback during training meetings, including long-distance meetings. They are a way to get everyone involved—even people who typically choose not to speak in meetings.

Advantages: The main advantage of keypad and keyboard systems is their capability for immediate feedback on responses to questions. As participants review the results on the screen, they can clarify their choices, compare them with others, offer new ideas, discuss areas of disagreement, and even reach decisions. Other advantages: Responses can be stored on a disk and printed later for minutes or reports. Not only do keyboards and keypads get everyone involved, they also allow people to remain anonymous—thereby freeing discussion from the inhibitors of power, personality, and politics.

Disadvantages: The main disadvantage of these systems is their initial cost—for the equipment, the computers, and the LCD panel. Of course, when distance meetings are involved, there are additional costs—telephone, microwave, or satellite hook-up equipment or paid time.

Computer-Based Learning Systems

Computer-based learning systems include all the learning systems and activities that have a digital computer or microprocessor as an integral component. Such systems include:
Hardware—the physical equipment that makes up the computer and its ancillary devices (central processing unit, tape/disk access storage, terminals, keyboards, light pens, other peripherals, and test, maintenance, and diagnostic equipment).

Software—the programs written in computer language that control the computer components of the system and cause them to operate in accordance with the programmer's instructions.

Learningware or courseware—the computer-assisted lessons, computer-managed functions, or video/audio materials delivered to the trainee by the system.

Computer-Assisted Instruction. Computer-assisted instruction (CAI) involves the use of a computer to conduct, or assist in conducting, instruction. There are two basic modes of CAI: (1) Use of a large, centralized, high-storage-capacity computer with its associated hardware, software, and learningware, and remote learning terminals to be used by trainees, and (2) use of small, self-contained minicomputers or microprocessors with their own hardware, software, and learningware.

CAI permits individualized instruction of large numbers of trainees simultaneously. The learning stimulus may be a cathode ray tube (CRT), typewriter printout, or keyboard. The response modes may be keyboard or light pen. The system may have the capability to regulate the difficulty of the problems, the rate of presentation, and the type of material presented on the basis of the past performance of the individual trainee. In addition, a record of performance or responses can be maintained. CAI can also be combined with video to provide interactive systems. A microprocessor controls the system and permits program branching and random access memory.

Uses. CAI systems are used in tutorial, drill, practice, game, modeling, simulation, and problem-solving modes: (1) to teach complex analytical skills, (2) to provide automated and individualized drill or practice in manual, manipulative, or cognitive skills, and (3) to teach deductive inference and advanced problem solving by conversational interaction or simulation.

Advantages. The computer-based instructional system, because it is self-paced, has the same trainee learning advantages as programmed instruction and teaching machines. The computer has the additional advantage of speed of reaction, ability to adjust the program to the individual, and the capacity to handle relatively large groups of trainees simultaneously. Use of a computer-based system speeds learning because it presents pertinent information to the trainee without time-consuming devices.

Disadvantages. CAI systems can be expensive, particularly when large, centralized, high-storage-capacity systems are purchased or when access to them is limited. Programs for such systems are often difficult to design because of their inherent complexity and the computer languages required. In addition to being far less expensive, small, self-contained systems offer flexibility. But, like their larger cousins, they require learning specialists with computer programming skills to develop the learningware. And CAI systems are not the right mediating devices when human interaction is essential to learning.

Computer-Managed Instruction. Computer-managed instruction (CMI) involves the use of a computer to manage instructional programs and systems. Again, either a large, centralized, large-storage-capacity computer with its associated hardware and
software or a small, stand-alone computer with its ancillary equipment and software can be used to operate CMI systems.

Uses. CMI systems can dramatically increase the efficiency of learning systems. They can be used (1) to test trainees and track and record their progress and accomplishment, (2) to develop and implement training prescriptions tailored to the needs of individual trainees, (3) to maintain inventories and records pertaining to training space, facilities, equipment, materials, and supplies, and (4) to perform other resources allocation, accounting, and reporting functions.

Advantages. CMI systems can eliminate all or most of the time-consuming manual record-keeping tasks and thereby allow training specialists to spend their time and energies on truly professional tasks. CMI offers great flexibility, appropriate prescriptions, and remarkable responsiveness in terms of the formata frequency, and time required to produce training prescriptions and reports.

Disadvantages. There are no real disadvantages to CMI once the problems associated with purchasing or leasing the computer system(s) and developing the software required to operate the programs are dealt with. Like the development of learningware, the development of software requires considerable expertise on the part of learning specialists and programmers—and, of course, a computer system with sufficient storage capacity to accommodate both the CAI software and learningware and the CMI software.

Television

Television can be used as a mediating device in three modes: closed circuit, videotape or videodisc, and interactive video. In all its modes, TV has several characteristics of great significance for training:

- It has the quality of indefinite extension; that is, once the cost of production has been met, instructional television can be used with as many classes, either simultaneously or sequentially, as there are receivers available.
- It communicates sound.
- It is a visual medium and thus is ideally suited for showing objects, processes, maneuvers, and their interrelationships.
- Television transmits action; it is a dynamic medium.
- It has immediacy, a quality that heightens its "real world" character and adds to its impact.
- It is an inclusive medium; it can transmit clearly all the other audiovisual materials, that is, films, slides, charts, and so on.

Closed-Circuit Television. A closed-circuit TV system consists of one or more television cameras (with associated control equipment); lighting equipment; audio equipment; film chains; videotape or videodisc recorders; a distribution system that makes use of coaxial cable, microwave, or satellite communications for the transmission of signals (picture and sound); and receivers.
Video Recording and Playback. Video recording and playback systems require production equipment (a complete equipped production studio or mobile production facility) if tapes or discs are to be produced locally. However, if commercially available instructional materials are to be used, the only requirements are for playback equipment (videotape or videodisc playback equipment and a television receiver).

Videotape. Videotape equipment may have all or some of the following capabilities: indexing, fast scan forward and reverse, freeze frame, and slow motion. The main disadvantages are lack of random access to individual frames (nonprogrammable manual search), inability to accommodate branching programs, limited frame capacity, and relatively short life expectancy.

Videodisc. Videodisc equipment typically has all the following capabilities: indexing, capacity of up to 54,000 still frames per side, minimum of 27 minutes playing time per side, 2-channel stereo sound track, fast scan forward and reverse, freeze frame, slow motion, step frame, program branching, and long life expectancy because of use of laser optics to read discs (no stylus). Its disadvantages are relatively high cost for small quantity of production and relatively long lead time (three to eight weeks) for manufacture of disc recordings in quantity.

Uses. In any of its modes, television can be used to (1) teach operation and functioning of equipment, (2) teach individual and team skills, (3) bring dangerous demonstrations into the training area or classroom, (4) give close-up magnification of small equipment components, (5) compare objects simultaneously, (6) integrate films, graphics, or other training aids into an instructional sequence, (7) repeat instruction, (8) provide a means of expediting instruction, and (9) provide feedback to learners on their performance of complex tasks or skills.

Advantages. With instructional television, the instructor reaches the learners; therefore, every viewer is being addressed personally. Television projects personality, because of direct address and the use of close-ups. The ability of TV to magnify even the smallest objects and to speed up or slow down movement is one of its greatest advantages.

TV represents selective attention. It draws the trainees' attention to the screen and tends to reduce the amount of random attention so characteristic of conventional classroom instruction. TV is also selective in that it represents edited reality. A carefully prepared lesson, recorded and edited skillfully, eliminates extraneous material and retains only significant instructional points and the examples illustrating them. Because of the way in which TV productions are planned and produced, they are more efficient than conventional lessons. A presentation that takes 50 minutes by conventional presentation means can be adequately covered in a 20- to 30-minute TV version. This is largely the result of careful planning. Nonessential material is deleted, visuals are presented without wasted motion, and the instructor does not wander away from the carefully prepared script.

Disadvantages. The TV screen, whether large or small, can handle only the amount of detail that the number of lines and the resolution of the receiving set can convey. Thus, at best, it is somewhat less than real-life visibility. TV usually allows for only one-way communication. The exceptions are its use in the interactive mode and teleconferencing applications.
Interactive Laser Videodisc

Laser Videodisc is the hot new teaching tool of the 1990s. It can be used either as a stand-alone device or in tandem with a personal computer in a fully interactive training system. It has two components: (1) a laser optical pickup device attached to a highly accurate tracking servomechanism and (2) laser optical discs, with tiny digitally encoded pits arranged in spiral tracks on their surfaces. Laserdiscs, unlike audio compact discs, can be recorded on both sides, each with a capacity of up to 54,000 individual video frames.

The pickup focuses a laser beam on a specific track on a disc in the player. The beam is reflected back to a photodiode matrix, which converts the laser beam to an electronic signal. Digital circuits in the player convert the electronic signal into picture and sound, which are then transmitted to a playback system.

Three levels of laserdisc capability are available: (1) laserdisc player plus television or A/V monitor—the basic system, which provides high-quality video and sound, random access to images, instant search, repeat, and freeze frame; (2) laserdisc player with internal manual programming capability plus television or A/V monitor—a system that can also be automatically programmed by means of instructions from a disc, and (3) laserdisc player plus computer plus interactive software plus A/V monitor—the laserdisc player is connected to a personal computer by I/O port, which enables the user to create and control sophisticated applications by means of currently available authoring systems. Levels 1 and 2 systems can be upgraded to Level 3.

Uses. Laserdisc video can be used to (1) illustrate lecture material, (2) conduct interactive lessons (present material, ask questions, and respond according to trainee responses), (3) develop and present demonstrations, including slow motion, (4) provide independent training, make-up and review, (5) create permanent courseware (produce and edit videotapes), (6) administer tests and examinations, and (7) record trainee progress and accomplishment.

Advantages. Laserdisc video (1) stimulates trainees to learn and at a faster pace than ever before, (2) provides enhanced picture and sound quality (over videotape, film, or other traditional media), (3) delivers high capacity (108,000 video frames per disc), (4) provides fast search speed and accurate random access to individual frames; (5) provides freeze-frame capability, (6) is convenient and flexible, (7) gives extended longevity with no degradation of quality, (8) is durable (will stand up to many hours of use), and (9) enables connectivity to other optional devices, such as personal computers.

Disadvantages. Laserdiscs are expensive to produce and are not cost-effective unless the content of the training program is stable and the potential trainee audience is large.

Procedures for Strategy Selection

The process of selecting instructional strategies cannot be set forth as a series of routine steps anyone can follow. Selecting strategies involves many variables and is, therefore, an extremely complex task. Strategy decisions must be based primarily on professional and considered judgment following a careful weighing of all factors. The systems de-
Selecting and Using Training Strategies and Media

Signer must have a thorough knowledge of methods of instruction, systems of trainee and instructor organization, and mediating devices; and an understanding of the uses, advantages, and limitations of each of these elements of strategy. For this reason, the first step in the selection process is to study the preceding section of this chapter. The remainder of this chapter describes a method of arriving at a choice of strategy. It is deceptively simple. However, there are many judgments involved. Therefore, the procedures must be viewed as guides only. The appropriateness of strategies selected, even using the procedures as defined, still hinges on the quality of the judgments made. Figure 12-1 presents a guide for selecting instructional strategies.

Steps in Selecting Strategies

1. Study the performance objective for the specific block of instruction as entered on the performance objective worksheet (see Figure 9-7). Note carefully:
   a. What the trainee should be able to do following the instruction
   b. The conditions under which he or she must perform
   c. The criterion of successful performance

2. Compare the behavior described in the performance objective with the training objectives listed in Figure 12-1, section A, items 1 to 10. When the objective has been found that most closely matches that of the instructional block, note the primary and supporting methods in columns 2 and 3 and the organizational system identified in column 5. The mediating device identified in column 4 is not essential to the use of the method.

3. Check the tentative selection of a method against the remaining criteria listed in Figure 12-1, sections B to G. If the item describes the type of content the instruction deals with, the type of trainee in the class, the instruction considerations that apply, as well as the facilities, equipment, materials, and time factors that apply; then look at the primary method entered in column 2. If this does not match the original selection, go back to the item and select an alternative method from column 6. Recheck this method against all applicable criteria in sections B to G.

Here is a specific example of how to carry out the three steps just mentioned:

Objective: Without using references, and with a time limit of 5 minutes, the student must be able to calculate the resistance of a resistor of unknown value using the Wheatstone bridge circuit.

1. The typical training objective in Figure 12-1 that most closely matches this objective is criterion A-14. The primary method recommended in column 2 is programmed instruction (PI) followed by performance (P) in column 5. If no program is available to teach this skill, now check section B of the criteria, items 1, 4, 6, 7, 9, 10, and 12 apply. Note that for criterion, PI is either the primary or alternative method recommended.

2. Now check section C. Criteria 2, 3, 4, and 5 apply. Again either the primary or the alternative method includes PI. Check columns 6, 7, and 8 for criterion A-14 to find the alternative methods and the mediating device. The methods recommended are a lecture and demonstration on television (video records)
Figure 12-1. Guide to the selection of instructional strategies.*

<table>
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<tr>
<th>Criteria</th>
<th>Primary Strategies</th>
<th>Alternative strategies</th>
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<tbody>
<tr>
<td></td>
<td>Primary method</td>
<td>Supporting method</td>
</tr>
<tr>
<td>A. Training objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. To orient trainees to policies, rules, course purposes, learning resources, or the like.</td>
<td>L</td>
<td>C</td>
</tr>
<tr>
<td>2. To introduce a subject, indicate its importance, and present an overview of its scope.</td>
<td>L</td>
<td>C</td>
</tr>
<tr>
<td>3. To give directions to trainees on procedures to use in subsequent learning activities.</td>
<td>L</td>
<td>C</td>
</tr>
<tr>
<td>4. To provide individualized remedial assistance.</td>
<td>P1</td>
<td>T</td>
</tr>
<tr>
<td>5. To illustrate the application of rules, principles, or procedures.</td>
<td>D</td>
<td>PE</td>
</tr>
<tr>
<td>6. To provide means of accelerating individual trainees.</td>
<td>P1</td>
<td>PE</td>
</tr>
</tbody>
</table>

*Key to abbreviations at end of guide.
<table>
<thead>
<tr>
<th>Criteria</th>
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<th>Alternative strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To provide more advanced work in a subject for faster, more able, or more experienced trainees (vertical enrichment).</td>
<td>PI VE TM any</td>
<td>COM none none TT</td>
</tr>
<tr>
<td>2. To provide closer contact with a content area for faster, more able, or more experienced trainees (horizontal enrichment).</td>
<td>PI VE TM any</td>
<td>COM none none TT</td>
</tr>
<tr>
<td>3. To provide an alternate means of training for delinquent (makeup) instructors.</td>
<td>PI VE TM any</td>
<td>T none none TT</td>
</tr>
<tr>
<td>4. To build required common background for in-class study of a subject (advance study).</td>
<td>PI C TM any</td>
<td>SA C none TT</td>
</tr>
<tr>
<td>5. To provide review of content or practice of skills (tough in class homework).</td>
<td>PI P TM any</td>
<td>SA PI none TT</td>
</tr>
<tr>
<td>6. To provide a pattern for later performance and to set standards for that practice.</td>
<td>D P TRS any</td>
<td>D PI TV any</td>
</tr>
<tr>
<td>7. To teach manual or manipulative operations, including the use of tools and test equipment, assembly, disassembly, or repair of equipment.</td>
<td>PI D none any</td>
<td>PI D none any</td>
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<td></td>
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<td>PI D none any</td>
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<td></td>
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<td>PI D none any</td>
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<tr>
<td>Criteria</td>
<td>Primary strategies</td>
<td>Alternative strategies</td>
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<tr>
<td></td>
<td>Primary method</td>
<td>Supporting method</td>
</tr>
<tr>
<td>14. To teach principles or theories (why something works).</td>
<td>PI</td>
<td>PE</td>
</tr>
<tr>
<td>15. To teach operation and functioning of equipment (how something works).</td>
<td>PI</td>
<td>PE</td>
</tr>
<tr>
<td>16. To teach the execution of tactical movements or team skills.</td>
<td>PI</td>
<td>PE</td>
</tr>
<tr>
<td>17. To teach use or control of the voice, balance, breath, or muscles.</td>
<td>PI</td>
<td>PE</td>
</tr>
<tr>
<td>18. To stimulate trainee interest and thinking through group participation.</td>
<td>C</td>
<td>none</td>
</tr>
<tr>
<td>19. To make use of trainees' past experience in collecting facts and analyzing for the solution of a problem.</td>
<td>C</td>
<td>SA</td>
</tr>
<tr>
<td>20. To teach safety procedures.</td>
<td>D</td>
<td>PE</td>
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</tbody>
</table>
Advantages. The opportunity to express one’s own views and to hear the opinions of others is stimulating. Interest is unusually high in a well-planned and skillfully conducted conference. Because trainees actively participate in developing the lesson, they tend to accept the importance and validity of the content and are more deeply committed to problem solutions or decisions than they would be if the content were merely presented to them. The conference method enables the instructor to make effective use of the trainees’ backgrounds, previously acquired knowledge, and experiences. The entire class and the instructor benefit from the experience and thinking of all trainees. Learning takes place in direct proportion to the amount of individual participation in the learning process. The conference demands a high degree of trainee participation, thereby promoting better and more permanent learning.

Disadvantages. The more important limitation is the lack of instructors capable of conducting true discussions. The conference is more exacting in resourcefulness, initiative, and ability of the instructor. The instructor must be able to guide the discussion without appearing to do so. He or she must be thoroughly informed on all aspects of the subject under discussion. The instructor must also (1) keep the discussion on track, (2) minimize debate over unimportant details, (3) relate comments to topics previously discussed, (4) avoid reopening topics already discussed, (5) encourage and get full participation, (6) prevent domination by a few trainees, and (7) summarize and clinch each topic.

Most conferences require advance preparation, in the form of reading assignments, thinking, and study. The thoroughness of the preparation before the meeting determines the quality of the discussion and the outcome of the conference. The instructor has very little or no control at all over the quality or thoroughness of trainee preparation. This results in variation among trainees in their readiness to participate in the conference. The content appropriate for discussion is restricted. Manipulative operations, functions, procedures, or manipulative material do not ordinarily provide suitable content for a conference. Relatively large blocks of time must be allocated if a discussion is to be profitable. For this reason, the conference is often ruled out as an approach, although it may be well suited to the subject and the class. The conference method cannot be used effectively with groups of more than 2 to 15 trainees because the opportunity for individual participation is too limited. The members of a conference group, in most cases, must possess the proper background, maturity, and motivation if the discussion is to be profitable.

Demonstration

In a demonstration, the instructor actually performs an operation or does a job, thereby showing the trainee what to do and how to do it; he or she then uses explanations to point out why, where, and when it is done. Usually, the trainee is expected to be able to repeat the job or operation after the demonstration. For this reason, the demonstration is often used in conjunction with another method. The most usual combinations are the lecture-demonstration and the demonstration-performance.

Uses. The basic purpose of a demonstration is to show how something is done. It should be employed whenever and whenever practicable. Some of its more important applications are: (1) to teach manipulative operations or procedures; (2) to illustrate processes; (3) to show where and how a process is designed; (4) to show what a designed process does; (5) to demonstrate the advantages or disadvantages of a process; (6) to show the proper sequence of operations; (7) to show the proper attitude or demeanor of a person during operation; (8) to demonstrate the correct technique or methodology; (9) to show how something is done; (10) to show how something can be done.
done), (2) to teach problem-solving and analytical skills, (3) to illustrate principles (how something works), (4) to teach operation or functioning of equipment (how something works), (5) to teach teamwork (how people work together to do something), (6) to standards of workmanship, and (7) to teach safety procedures.

Advantages. Trainees learn faster and more permanently with a demonstration for several reasons:

- Demonstrations make explanations concrete by giving meaning to words.
- Demonstrations provide perspective by showing complete performance of a procedure. Relationships between steps of the procedure and accomplishment of objective are clarified.
- Demonstrations appeal to several senses. Not only do trainees see and hear during a demonstration, but they are often given the opportunity to touch the equipment.
- Demonstrations have dramatic appeal. When well planned and executed, a demonstration has a dramatic quality that arouses and sustains interest and attention.

Equipment is often damaged when trainees attempt to operate it without proper guidance. Much of this damage can be prevented by the use of demonstration. A properly planned demonstration takes much less trainee time than other methods. It reduces oral explanation time and at the same time prevents misunderstandings about how system or a piece of equipment works. Class size is limited only by the ability of a group to see the object being demonstrated.

Disadvantages. A demonstration should set a standard of performance for trainees. The procedure must be technically correct and must be performed with a speed greater than that expected of trainees. The instructor must be sure that the equipment in working order. Nothing fails as completely as a demonstration that does not work. The demonstration room must be set up so that all trainees can clearly see every part of the demonstration. This requires special classroom arrangements. Sometimes models or mockups must be purchased or constructed, which involves a rather costly investment of time, money, and other resources.

Performance

Performance is a method in which the trainee is required to perform, under controlled conditions, the operation, skill, or movement being taught. Performance is learning by doing. There are four basic types of performance: (1) independent practice, in which trainees work individually and at their own rates, (2) group performance or controlled practice, in which trainees work together at the pace set by the instructor, step by step and "by the numbers," (3) coach and pupil, in which trainees are paired and member of each pair perform alternately as instructor and trainee, and (4) team performance, which a group of trainees perform an operation or function involving teamwork.

Uses. In general, the performance method has the same applications as the demonstration method. It is used as follow-on instruction to teach manipulative operation or procedures, operation or functioning of equipment, team skills, and safety procedures.
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<tr>
<th>Primary strategies</th>
<th>Alternative strategies</th>
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<tbody>
<tr>
<td><strong>Criterion</strong></td>
<td><strong>Primary method</strong></td>
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<tr>
<td>To develop communication skills.</td>
<td>CS</td>
<td>RP</td>
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<tr>
<td>To develop self-understanding.</td>
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<tr>
<td>To develop managerial skills; for example, decision making.</td>
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<tr>
<td>To develop teamwork.</td>
<td>G/S</td>
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<tr>
<td>To improve technical performance.</td>
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<tr>
<td>To develop creativity — creative solutions to problems.</td>
<td>D</td>
<td>none</td>
</tr>
<tr>
<td>To gather facts or points of view on an issue or problems.</td>
<td>P</td>
<td>NS</td>
</tr>
<tr>
<td>To stimulate interest and participation in a large group.</td>
<td>BS</td>
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<tr>
<td>1. Deals mainly with concepts and principles.</td>
<td>PI</td>
<td>C</td>
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<td></td>
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<tr>
<td>10. Demands absolute control over the form of the trainee's response.</td>
<td>PI</td>
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<tr>
<td>11. Leads itself to oral presentation.</td>
<td>L</td>
<td>D, C</td>
</tr>
<tr>
<td>12. Is relatively sterile.</td>
<td>PI</td>
<td>PE</td>
</tr>
<tr>
<td>13. Is subject to frequent and radical change.</td>
<td>L</td>
<td>D</td>
</tr>
<tr>
<td>C. Trainer population</td>
<td>L</td>
<td>D</td>
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<tr>
<td>1. Is relatively homogeneous in terms of aptitude, ability, speed of learning, prior training, or experience.</td>
<td>PI</td>
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<td>2. Has wide differences in aptitude, ability, speed of learning, prior training, or experience.</td>
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<td>3. Is mature enough and sufficiently motivated to work more or less independently.</td>
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<tr>
<td>4. Has the level of reading ability required to deal with the instructional material.</td>
<td>PI</td>
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<table>
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<td>4. In short supply or unavailable.</td>
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<tr>
<td>8. Skilled in the use of individual tutoring techniques.</td>
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<tr>
<td>1. Able to work effectively as members of a team.</td>
<td>COM none none TT none none none none</td>
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<td>2. Blends or a variety of methods and techniques of teaching.</td>
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<td>3. Furniture, equipment, and materials</td>
<td>L D TG any COM none none none</td>
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<td>4. Centralized facilities are in short supply or lacking.</td>
<td>D PE TG any all SPM none none</td>
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<td>5. Seating permits face-to-face communication.</td>
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<td>6. Equipment components are large enough for all trainers to see them clearly.</td>
<td>D none TG any COM all SPM none none none</td>
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<td>7. Equipment components are too small for all trainers to see them clearly.</td>
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<tr>
<td>7. Equipment and materials are in adequate supply.</td>
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<td>HI</td>
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1. A large amount of material must be taught in a short period of time.
2. A minimum amount of lead time is available for the preparation of instruction and instructional materials.
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<td>3. Land time for the preparation of instruction and instructional materials is plentiful.</td>
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<td>4. Personnel must complete training at the same time.</td>
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<td>5. Different course completion times are not critical to subsequent training or assignments.</td>
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<td>6. Other</td>
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<td>1. Individual and continuous trainee progress is essential.</td>
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<td>2. Active trainee response is critical to learning.</td>
</tr>
<tr>
<td>3. Active trainee response is not critical to learning.</td>
</tr>
<tr>
<td>4. Standardization of instruction is critical.</td>
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<th>Primary strategies</th>
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<tbody>
<tr>
<td><strong>Primary method</strong></td>
<td><strong>Supporting method</strong></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
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<tr>
<td>PI</td>
<td>CAM</td>
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<tr>
<td>D</td>
<td>PE</td>
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<td>PE</td>
<td>none</td>
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<tr>
<td>C</td>
<td>none</td>
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<tr>
<td>PI</td>
<td>COM</td>
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<td>PE</td>
<td>none</td>
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<td>C</td>
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<td>PI</td>
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<td>D</td>
<td>PE</td>
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<td>PE</td>
<td>none</td>
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<tr>
<td>C</td>
<td>none</td>
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</table>

(continued)
Figure 12-1 (continued)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Primary strategies</th>
<th>Alternative strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary method</td>
<td>Supporting method</td>
</tr>
<tr>
<td>5. Standardization of instruction is not critical.</td>
<td>CASM</td>
<td>none</td>
</tr>
<tr>
<td>6. Mastery of a skill is critical.</td>
<td>PE</td>
<td>none</td>
</tr>
<tr>
<td>7. An accurate record of teacher responses is required.</td>
<td>PI</td>
<td>PE</td>
</tr>
<tr>
<td>8. Immediate correction of errors is critical.</td>
<td>PI</td>
<td>PE</td>
</tr>
<tr>
<td>9. Problems of integration with other instructional strategies are not critical.</td>
<td>PI</td>
<td>PE</td>
</tr>
</tbody>
</table>

Key to Abbreviations:
- Basic Methods:
  - C: Conference
  - COM: Combination instruction
  - D: Demonstration
  - L: Lecture
  - PI: Project Orientation
  - PI: Programmed instruction
  - SA: Study assignment
  - T: Tutoring
- Special participative methods:
  - B: Brainstorming
  - BS: Brainstorming
  - C: Case study
  - CS: Case study
  - G: Group
  - G: Group Interview
  - CS: Computer simulation
  - E: Extended exercise
  - HM: Instructor method
  - P: Panel
  - RP: Role playing
  - SPPI: Special participative method
  - ST: Sensitivity training
- Multimedia:
  - CAI: Computer-assisted instruction
  - CAS: Computer-assisted instruction
  - TV: Interactive video
  - KPI: Keypads and keypad systems
  - SIM: Simulations
  - SIM: Simulations
  - TTS: TTS system
  - TV: Television
- Educational and Instructor organization:
  - CT: Cooperative training
  - HG: Homogeneous grouping
  - RG: Random groupings and assignments
  - SG: Small group
  - TL: Team learning
  - TT: Team teaching
Selecting and Using Training Strategies and Media

No such recording is available. The second alternative is a combination lecture-demonstration-performance lesson using any grouping. This method could be selected. Here is where judgment again enters the picture. There are other alternatives, and all of them must be considered before a decision is made.

Media Selection

The basis for all learning is experience, and the most effective and permanent learning is derived from concrete, direct experience. However, it is not always possible to provide firsthand experience for trainees. Often, the instructor must resort to an economical means of communicating facts and ideas—the use of symbols, both spoken and written. But words alone cannot provide the vivid, realistic experience required for optimal learning; they must be supplemented and reinforced by other media.

The wise selection and proper use of a variety of audiovisual materials can fill the gap between verbalization and real-life, direct experience. For this reason, training aids are an essential means of increasing the efficiency and effectiveness of training. Good media reduce the number of words required to communicate ideas. They stimulate interest, increase attention, promote understanding, and provide experience not obtainable in other ways.

Nature and Purpose of Training Media

In the broadest sense, training media include almost anything that assists the instructor in conducting training. For the purposes of this discussion, however, the items listed below, when used for training and development, are classified as training aids or media:

- **Priming or duplicated aids**: These aids include books, manuals, pamphlets, policy and procedure manuals, financial statements, regulations, directives, job sheets, advance sheets, and handouts.
- **Graphic aids**: These aids include pictures, drawings, illustrations, photographs, blueprints, templates, chalkboards, bulletin boards, easels, magnetic placards, embossing paper placards, maps, charts, diagrams, and flip charts.
- **Three-dimensional aids**: These aids include objects, globes, models, cutaways, mockups, sand tables, synthetic trainers, and displays.
- **Projected aids**: These aids include slides and transparencies of all sizes, films, transparencies, motion pictures, video recordings, and liquid crystal display (LCD) panels.
- **Auditory aids**: These include disc and tape recordings, and speech-compression recordings.

Training aids are used to facilitate communication of facts, ideas, principles, and concepts. In many cases, the aids are a substitute for reality—a necessary one to ensure the accurate transmission of information. In other instances, training aids are reality because the actual object, tool, instrument, or organism is observed or manipulated by the trainees. Regardless of the nature of training aids, their overriding purpose is to help the trainees acquire the knowledge and skills that are the objectives of training.
Criteria for Selecting Media

Judgment must be applied in the long-range and day-to-day choice of training aids and in the ways in which they are used. The course developer and the instructor must assume the responsibility for ensuring learning effectiveness and efficiency by selecting or developing training aids that complement the basic instructional strategy chosen to accomplish the training objectives. Each training medium has certain advantages and limitations. These factors must be carefully weighed before a final selection of aids is made.

Basic Selection Guides. The following general guides should be used in selecting training aids regardless of type:

- Select aids that fit the maturity, interest, and abilities of the trainee group. Aids that are childish or naive will alienate a mature group. Aids that are obscure or over-complicated only serve to confuse.
- Select aids that are most appropriate for the particular learning activity. An aid can meet all standards with respect to content, layout, or design and still be unsuitable for a specific learning situation.
- Maintain a balance in the kinds of aids used. Avoid repetitive use of any single kind of aid to the exclusion of others. Too many instructors use only one aid—for example, 3-by-3-inch transparencies—because it is convenient. With the variety of aids currently available, this should not happen.
- Select aids that complement, rather than duplicate, other learning resources. Avoid senseless duplication, such as showing slides of a piece of equipment that can be seen in an adjoining shop or laboratory or of a schematic that is included in a manual or handout issued to all trainees.
- Avoid the oversuse of aids. A training session should not be a three-ring circus or a psychedelic happening. The instructor who assaults the senses of trainees with a broadside of training aids may be a good showperson, but he or she is not an effective instructor. Do not use an aid just because it is available.
- The major criterion of selection is simply this: Will it advance learning; is it needed? A training aid must actually aid learning and not be mere “eye-wash.”

Conditions Facilitating the Use of Aids. Certain conditions encourage the use of training aids:

- Aids are available in sufficient variety and quantity to permit selectivity.
- Required equipment is available in sufficient quantities and is in good repair.
- Technical advice and assistance for the selection, fabrication, and use of aids are readily available.
- The lead time for fabrication, procurement, or purchase of aids is minimal.
- Aids are centrally catalogued and stored to facilitate control and use.

Guides for Selecting Media

This section describes guides for the use of printed or duplicated aids, incidental graphics, prepared graphics, three-dimensional aids, displays and exhibits, slides, transparencies, and films, motion pictures, and auditory aids.
Printed or Duplicated Aids. Printed or duplicated aids are materials used to support instruction in the form of books, manuals, periodicals, pamphlets, regulations, directives, or handouts.

Uses. Printed or duplicated aids are used (1) to provide advance assignments, that is, to serve as background information necessary for effective participation in classroom learning activities; (2) to provide reference material, that is, to serve as a basis for the preparation of reports or as source material for the solution of a problem; (3) to provide review and practice materials, in class or out of class, and (4) to evaluate or check on the effectiveness of other learning activities.

Advantages. Printed or duplicated aids can be organized carefully because they are prepared in advance of use. Large quantities of printed materials, usable in many training programs, are readily available from in-house and commercial sources. Printed or duplicated materials are among the least expensive training aids. They are also the most compact, and they can be easily and quickly duplicated in the required quantity.

Disadvantages. Unless printed materials are locally prepared, parts of the material may be unsuitable for local requirements because of the bias of the writing, the perspective represented, or the amount of detail included. Printed materials cannot provide for individual differences. They cannot be written at a level best suited to the abilities, interests, or backgrounds of all members of a trainee group. The extent to which the printed word conveys the intended meaning depends on the clarity and comparability of the meanings the writer and reader attach to the terms used. Finally, the amount of learning derived from printed materials is a function of the reading speed and comprehension of trainees. Differences in these skills within a trainee group will result in differences in the amount of learning as well as in varying completion times for any reading or study assignments.

Criteria. Printed or duplicated materials selected or produced to support training and development must (1) emphasize content that relates to and is consistent with the training objectives, (2) be free of bias and ambiguity, (3) be presented in an interesting and readable form and format, and (4) include, where applicable, aids to the reader in the form of indexes, glossaries, references, questions, and study hints.

Incidental Graphics. Graphic aids are materials that communicate facts and ideas through a combination of pictures, drawings, symbols, and words. The term incidental graphics refers to the use of a chalkboard, easel, or flip chart for illustrating symbols or words, during or immediately preceding the presentation of instruction.

Uses. Incidental graphics are used (1) to outline objectives—the chalkboard and easel are convenient media for emphasizing the objectives and scope of an instructional block; (2) to introduce technical terms—the devices offer a practical way of introducing the spelling, pronunciation, and definition of technical terminology; (3) to provide illustration—they offer a simple and convenient means of illustrating processes, objects, or ideas by the use of sketches or line drawings; and (4) to record key points—the graphic aids can be used effectively to record progress and evolution of ideas in problem solving and to emphasize the key points in a discussion.

Advantages. Incidental graphics are convenient. Almost all classrooms are equipped with chalkboards or easels, well positioned for easy use by the instructor. They are also flexible. The devices allow freedom in creating materials on the spot and in rearranging existing materials.

Disadvantages. Although graphic aids are easy to use, this factor often results in careless use and in resultant inefficient in learning. The background of the trainee determines the interpretation he or she makes of words, symbols, and even drawings.
Extensive chalkboard illustrations and listings require a great amount of preparation time. Lengthy boardwork should be prepared prior to each class. The use of other media should be considered.

Criteria. Materials placed on chalkboards or easels must be (1) appropriate for the instructional objectives, (2) neatly and clearly drawn or printed, so as to be clearly visible or readable to all trainees, and (3) accompanied by adequate explanation.

Prepared Graphics. Prepared graphics are printed, embossed, or photographic materials that communicate ideas clearly and forcefully in condenced form through a combination of pictures, drawings, symbols, and words. They include flat pictures, embossedgraph placards, charts, maps, graphs, and diagrams.

Uses. Prepared graphics are used (1) to introduce topics—graphics can readily capture trainee attention; (2) to stimulate interest—well-constructed graphics add interest to a lecture or discussion and stimulate trainee questions; (3) to provide illustration—graphics provide an effective means of illustrating objects, procedures, or ideas presented in lectures or demonstrations; (4) to effect emphasis—carefully selected graphics focus attention on the critical or important elements in a presentation; and (5) to summarize topics—graphics are effective summarizing devices.

Advantages. Quantitative data and complex relationships can be presented simply and clearly by means of graphics. Graphics are also inherently more interesting than verbal descriptions or numerical tabulations. They are relatively inexpensive to procure or produce. Finally, graphics are easily adaptable to many learning situations.

Disadvantages. Graphics are principally abstract and symbolic; hence they must be supplemented by other methods or media. They must focus on key points and dispense with detail. (In some situations this loss of detail may be critical. They are two-dimenional; therefore, if depth or motion is important to the learning, graphics may be completely unsuitable.

Criteria. Graphics used in instruction must (1) be large enough for all trainees to see them clearly, (2) be pleasing in composition and arrangement, (3) be accurate and truthful, (4) be sharp and clear so that all details are easily distinguishable, (5) avoid too much detail or an insufficiency of detail, (6) use color judiciously, (7) employ easily identifiable symbols; and (8) include only essential data.

Three-Dimensional (3-D) Aids. A 3-D aid may be any one of the following: (1) real objects (such as equipment, components, or tools removed as units from their normal setting), (2) models or cutaways (recognizable 3-D representations of real things), or (3) mockups (imitations of the real thing that are not necessarily similar in appearance).

Uses. Three-dimensional aids are used to provide illustration and to teach operation or functioning. Instead of merely talking about an object, or showing a picture of it, it is often more effective to present the actual object, or a model. How to operate equipment, tools, or instruments is often most effectively taught by using the actual objects, models, cutaways, or mockups.

Advantages. Three-dimensional aids give depth and substance to the item under study and thereby enhance learning. Nonessential elements of the item can be omitted or removed from the aid so that basic elements can be more easily observed. Models, cutaways, and mockups can provide interior views of objects ordinarily covered or otherwise invisible. In addition, large objects can be reduced in size, and small objects can be enlarged to convenient size for study and observation. Finally, color and texture can be added to 3-D aids to accent or emphasize important parts or features.
Disadvantages. Models, cutaways, and mockups are expensive to construct and maintain. Problems of clarity of communication and misunderstanding of size, function, or complexity may be created by 3-D aids. Such misunderstandings are difficult to correct. Three-dimensional aids are difficult to catalogue and require a considerable amount of storage space.

Criteria. Three-dimensional aids used in instruction must be: (1) accurate, that is, true to life, (2) large enough to be clearly visible to the entire student group, (3) as uncomplicated as possible, and (4) durable.

Displays and Exhibits. A display or exhibit is a collection of graphic, photographic, or 3-D aids grouped and displayed to accomplish a specific instructional purpose.

Uses. Displays and exhibits are used to introduce a subject and to summarize a subject. A well-designed exhibit or display is an excellent means of stimulating interest and student motivation. An exhibit or display can also be an effective means of providing a summary for a specific instructional block.

Advantages. Well-designed displays and exhibits are inherently more interesting than verbal descriptions. They are flexible and lend themselves to almost any type of content.

Disadvantages. Worthwhile exhibits and displays are time-consuming to design and produce. Adequate space in a desirable location is necessary to show them to best advantage. Trainers may not know what to look for in a particular exhibit or display; this problem, compounded by the fact that the items are not in their real-life settings, often leads to misunderstandings that are difficult to correct. Some things cannot be brought into the classroom or training area because of size, safety considerations, or expense.

Criteria. To be effective, an exhibit must (1) have a single central theme, (2) occupy a place of prominence, (3) be left up long enough to achieve its purpose, and (4) be attractively arranged, well lighted, and clearly labeled.

Slides, Transparency, and Filmstrips. Slides are single transparent pictures or drawings that can be projected onto a screen. They are usually made of photographic film, although sometimes they are etched on glass or plastic. Transparency are large slides, usually 7 by 10 inches or 10 by 10 inches. Filmstrips consist of a fixed series of individual slides placed on a single strip of 35-millimeter film.

Uses. Slides, transparencies, or filmstrips can be used to present an introduction and an overview of a subject or a process. Similarly, they can provide an effective means of summarizing and reviewing content previously taught by other means. They offer a simple and convenient means of illustrating objects, processes, or ideas.

Advantages. Slides, transparencies, and filmstrips can illustrate objects, events, and ideas that are far away in time or space; enlarge difficult-to-see objects; and stop action. Given a darkened or semidarkened room and a brilliant screen, the attention of the trainees is focused on the instructional materials. Actual photographs lend realism to instruction—the next best thing to firsthand experience. With slides, transparencies, and films the image can be left on the screen for any length of time for study and discussion. Projection equipment is easy to operate. Films, transparencies, and filmstrips do not require purchase or storage, occupy little storage space, and are easily catalogued. Projected visuals are suited for color as well as for black and white and can be used in a variety of learning situations.

Disadvantages. Sometimes the set sequence of a filmstrip, or the preplanned sc-
quence of a series of slides, is inappropriate. In the case of the filmstrips, it is impossible to change the order of frames. Equipment in good repair may not always be readily available, and sometimes the equipment breaks down. A still medium cannot portray motion effectively. If motion is essential, the slide, transparency, or filmstrip may be inadequate.

Criteria. Slides, transparencies, or filmstrips used in instruction must (1) fit the training objective, (2) avoid the inclusion of extraneous material, (3) be well designed, (4) be accurate, that is, true to life, and (5) be accompanied by appropriate commentary.

Motion Pictures. Motion pictures may be in black and white or color with or without sound, on 8-millimeter or 16-millimeter film.

Uses. Motion pictures can be used effectively to present an introduction and an overview of a subject. They provide an excellent means of explaining processes not available for direct observation because of time, distance, or safety. They also offer a way of presenting complex materials, of slowing down or speeding up processes, and of showing applications. Motion pictures can provide an effective means of summarizing content previously presented by other means. However, motion pictures are rapidly being replaced by video recordings.

Advantages. Motion pictures bring remote events into the classroom without loss of realism. Films can substitute for field trips, thereby saving travel. The condensed nature of a film production also results in time savings. The use of sound and motion increases interest, focuses attention on critical elements, and enhances learning.

Disadvantages. With motion pictures, trainees play a passive role. Because of the darkened room, note taking is kept to a minimum. Motion picture projectors, while not difficult to operate, are not always available, and they are subject to mechanical or electrical failure. Trainees must be carefully prepared for film viewing, and some sort of follow-up is needed to ensure learning. Trainees view films in the light of their own experiences. If provisions are not made for follow-up, misunderstandings may be the result.

Criteria. Motion pictures used for instruction must (1) fit the specific instructional purpose, (2) be preceded by specific preparation for viewing the film, (3) be followed by appropriate learning activities, and (4) be current.

Auditory Aids. Auditory aids include disc and tape recordings and their associated equipment.

Uses. Tape recorders can be used to record, evaluate, and improve speech habits, diction, voice,intonation, enunciation, and general speech patterns. Tape recorders and recordings are an effective means of building foreign language speech and listening skills. Recordings also provide a change of pace when more than one voice is used.

Advantages. Actual sounds can be reproduced with sufficient fidelity to foster the development of high-level discrimination skills. Recorders are easy to operate. Tape recordings are relatively inexpensive and are reusable, which further reduces costs.

Tapes can be used in a variety of learning situations, singly or in combination with other media, and by individuals as well as groups. Contents of tapes are easily changed to suit the instructional objective.

Disadvantages. Since recorders are necessary, they must be in good working order at all times. Equipment breakdowns, however, are quite common. Particularly when used by individuals, recordings can easily be misinterpreted, which may lead to a misunderstanding of concepts and thus errors in practice.
Criteria. Recordings used for instruction must make a definite contribution to the achievement of the training objective and be true to life.

Multimedia. Multimedia is the latest advance in training media hardware. In fact, it is becoming the standard for presentations of all types, including training. It integrates the power of sight, sound, color, motion, and touch. It involves the use of a computer to control (for either creation or delivery) a variety of media, such as a combination of text, still images, color graphics, motion video, animation, and high-quality digitized audio.

Uses. Multimedia systems are used as stand-alone training delivery systems, as training embedded in a work process or application, or as elements of an instructional strategy that includes other methods and techniques of instruction. They can provide a model and standard of behavior or performance for trainees to emulate and also furnish opportunities to practice skills. Multimedia systems are useful at all three stages of instruction: introduction, lesson development, and conclusion.

Advantages. Multimedia enhances trainee learning by using images, sound, and interactivity. It appeals to the visual orientation of today’s trainee population. It is often entertaining; even when it is not, it grabs and holds the attention of the learner. It is highly flexible since it uses only the elements needed to achieve a learning objective.

Disadvantages. The success of multimedia depends on (1) its use in situations where it is appropriate, (2) thorough planning and storyboarding, (3) imaginative selection of media, (4) effective programming, and (5) the availability of the right hardware. If all five elements are not present, multimedia will be ineffective.

Procedures for Selecting Media

To analyze requirements for training aids, the following steps should be taken:

1. On the media selection worksheet (see Figure 12-2), enter the lesson plan number and title, the program of instruction (POI) number and title, and the recommended instructional strategy.
2. Copy the performance objective from the performance objective worksheet (see Figure 9-2) in the space provided. Study the performance objective until you have clearly in mind what it is that the trainees must be able to do, the conditions under which they must perform, and the criterion of successful performance. Keep these factors in mind when you select your training aids.
3. Analyze the trainee group scheduled for this block of instruction in terms of previous instruction, related training and experience, acquired skills, vocabulary, level of maturity, and instruction that will follow. Keep these factors in mind when you select a training aid.
4. Consider the facilities that will be used to conduct instruction in terms of class size, time available for instruction, room characteristics, and equipment available.

Steps in Tentative Selection

1. Carefully review each part of the content outline and make appropriate entries in column 1 of the media selection worksheet (Figure 12-2). These entries should
Figure 12-2. Media selection worksheet.

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<th>1</th>
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<th>3</th>
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<tbody>
<tr>
<td><strong>Content outline</strong></td>
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<tr>
<td><strong>Applicable types of aids</strong></td>
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<td><strong>On hand</strong></td>
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<td><strong>Requires fabrication or requisition</strong></td>
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<td><strong>Introduction to lesson</strong></td>
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<td><strong>Body of lesson</strong></td>
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<tr>
<td>(Enter abbreviated list of major teaching points.)</td>
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<td><strong>Summary</strong></td>
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</table>

a. Indicate the purpose and coverage of the introduction.
b. List the major teaching points in abbreviated form.
c. Indicate the main points of the summary of the lesson.

2. For the introduction, the body of the lesson, and the summary, if appropriate, select a typical aid that will supplement, rather than supplant, the method or strategy being used. Enter the name of the aid in column 2 of the worksheet, for example, transparency, motion picture, model, or handout. Before making your decision, carefully check the uses, advantages, and disadvantages of each type of aid detailed earlier in this chapter.

**Steps in Final Selection and Procurement**

1. Check local resources. If the type of aid desired is available, get it and study it with these questions in mind.
   a. Does it meet the objectives?
   b. Does it support the strategy?
Selecting and Using Training Strategies and Media

2. If the answer to each of these questions is yes, place a check mark in column 3 of the worksheet for each part of the outline for which a training aid is on hand. If the answer to any one of the questions is no, arrange with the training aids division to update or redesign the fabricated aid.

3. If no suitable fabricated aid is available, consult with media specialist to determine whether a suitable aid can be fabricated. Get answers to these questions:
   a. Can the teaching point be adequately visualized?
   b. Can the aid be made locally?
   c. Is sufficient lead time available for fabrication of the aid?

4. If the answer to each question in step 3 is yes, place a check mark in column 4 of the worksheet. Prepare a rough sketch or sample of the required training aid, and prepare a request for procurement, duplication, purchase, or fabrication.

CHECKLIST FOR SELECTING STRATEGIES AND MEDIA

Strategy Selection

- Strategy decisions are based on professional and considered judgment following careful consideration of the following factors:
  - Instructional objectives
  - Course content
  - Trainee population
  - Instructional staff
  - Space, facilities, equipment, and training materials
  - Costs

- All the following methods of instruction are considered in selecting training strategies:
  - Lecture
  - Conference
  - Demonstration
  - Performance
  - Mediated instruction
  - Study assignment
  - Tutoring
  - Combination instruction
  - Special participative methods
    - Case study
    - Incident method
    - Role playing
    - T-group training
    - Games, models, and simulations
    - In-basket exercises
    - Brainstorming
    - Buzz sessions
Trainee and Instructor Organization

- The following types of trainee and instructor systems of organization are considered in strategy selection:
  - Random grouping and assignment
  - Homogeneous trainee grouping
  - Team teaching
  - Team learning
  - Cooperative training

Mediating Devices

- The following types of mediating devices are considered in developing a training strategy:
  - Teaching machines
  - Trainee response systems
  - Keypad and keyboard systems
    - Computer-based learning systems
      - Computer-assisted instruction
      - Computer-managed instruction
    - Television
      - Closed-circuit
      - Video recording and playback
      - Interactive video
  - Multimedia
  - Simulators/simulation

Media Selection

- Selection of media to support training is based on consideration of the following:
  - Appropriateness for the trainees in terms of their maturity, interests, and abilities
  - Appropriateness for the learning situation and planned learning activities
  - Proper balance of the types of media used
  - Potential contribution to the learning process

- The following types of media are considered:
  - Printed or duplicated aids
  - Incidental graphics
  - Prepared graphics
  - Three-dimensional aids
For Further Reading, Viewing, and Listening


Fritz, Mark. """"EyePhone, DataSuits, and Cyberspace."""" *CBT Directions*, June 1990, pp. 11–17.


At a recent national conference of the National Society for Sales Training Executives (NSSTE), J. P. Huller of Hobart Corporation presented a paper on "evaluation." In the introduction, he says, "All managers, not just those of us in training, are concerned over their own and their department's credibility. I want to be accepted by my company. I want to be trusted by my company. I want to be respected by my company. I want my company and my fellow managers to say, 'We need you.'

"When you are accepted, trusted, respected, and needed, lots and lots of wonderful things happen:

- Your budget requests are granted.
- You keep your job. (You might even be promoted.)
- Your staff keep their jobs.
- The quality of your work improves.
- Senior management listens to your advice.
- You're given more control.

"You sleep better, worry less, enjoy life more. . . . In short, it makes you happy."

"Wonderful! But just how do we become accepted, trusted, respected, and needed? We do so by proving that we deserve to be accepted, trusted, respected, and needed. We do so by evaluating and reporting upon the worth of our training."
Evaluating Training Programs

This states in general terms why we need to evaluate training. Here are three specific reasons:

1. To justify the existence of the training department by showing how it contributes to the organization's objectives and goals
2. To decide whether to continue or discontinue training programs
3. To gain information on how to improve future training programs

There is an old saying among training directors: When there are cutbacks in an organization, training people are the first to go. Of course, this isn't always true. However, whenever downsizing occurs, top management looks for people and departments that can be eliminated with the fewest negative results. Early in their decision, they look at such overhead departments as Human Resources. Human Resources typically includes people responsible for employment, salary administration, benefits, labor relations (if there is a union), and training. In some organizations, top management feels that all these functions except training are necessary. From this perspective, training is optional, and its value to the organization depends on top executives' view of its effectiveness. Huller is right when he states that training people must earn trust and respect if training is to be an important function that an organization will want to retain even in a downsizing situation. In other words, trainers must justify their existence. If they don't and downsizing occurs, they may be terminated, and the training function will be relegated to the Human Resources manager, who already has many other hats to wear.

The second reason for evaluating is to determine whether you should continue to offer a program. Some programs are offered on a pilot basis in hopes that they will bring about the results desired. These programs should be evaluated to determine whether they should be continued. If the cost outweighs the benefits, the program should be discontinued or modified.

The most common reason for evaluation is to determine the effectiveness of a program and ways in which it can be improved. Usually, the decision to continue it has already been made. The
question then is, How can it be improved? In looking for the answer to this question, you should consider these eight factors:

1. To what extent does the subject content meet the needs of those attending?
2. Is the leader the one best qualified to teach?
3. Does the leader use the most effective methods for maintaining interest and teaching the desired attitudes, knowledge, and skills?
4. Are the facilities satisfactory?
5. Is the schedule appropriate for the participants?
6. Are the aids effective in improving communication and maintaining interest?
7. Was the coordination of the program satisfactory?
8. What else can be done to improve the program?

A careful analysis of the answers to these questions can identify ways and means of improving future offerings of the program.

I just talked to Matt, a training director of a large bank, and asked him to write a case history on what his organization has done to evaluate its programs. Here is what he said: “We haven’t really done anything except the ‘smile’ sheets. We have been thinking a lot about it, and we are anxious to do something. I will be the first one to read your book!”

This is probably a typical situation, even in large companies. Most use reaction sheets of one kind or another. Most are thinking about doing more. They haven’t gone any further for one or more of the following reasons:

- They don’t give it a lot of importance or urgency.
- They don’t know what to do or how to do it.
- There is no pressure from higher management to do more.
- They feel secure in their job and see no need to do more.
- They have too many other things that are more important or that they prefer to do.

In most organizations, both large and small, there is little pressure from top management to prove that the benefits of training
Evaluating Training Programs

... weigh the cost. Managers at high levels are too busy worrying about profits, return on investment, stock prices, and other matters of concern to the board of directors, stockholders, and customers. They pay little or no attention to training unless they hear bad things about it. As long as trainees are happy and do not complain, trainers feel comfortable, relaxed, and secure.

However, if trainees react negatively to programs, trainers begin to worry, because the word might get to higher-level managers that the program is a waste of time or even worse. And higher-level managers might make decisions based on this information.

In a few organizations, upper-level managers are putting pressure on trainers to justify their existence by proving their worth. Some have even demanded to see tangible results as measured by improvements in sales, productivity, quality, morale, turnover, safety records, profits, and even return on investment. In these situations, training professionals need to have guidelines for evaluating programs at all four levels. And they need to use more than reaction sheets at the end of their programs.

What about trainers who do not feel pressure from above to justify their existence? I suggest that they operate as if there were going to be pressure and be ready for it. Even if the pressure for results never comes, trainers will benefit by becoming accepted, respected, and self-satisfied.

Summary

There are three reasons for evaluating training programs. The most common reason is that evaluation can tell us how to improve future programs. The second reason is to determine whether a program should be continued or dropped. The third reason is to justify the existence of the training department. By demonstrating to top management that training has tangible, positive results, trainers will find that their job is secure, even if and when downsizing occurs. If top-level managers need to cut back, their impression of the need for a training department will determine whether they say, “That’s one department we need to keep” or “That’s a department that we can eliminate without hurting us.” And their impression can be greatly influenced by trainers who evaluate at all levels and communicate the results to them.