VII. INLAND WATER TRANSPORT TRAINING MANAGEMENT*

1. Training and Development

Several years ago, a plant manager contacted a consultant for assistance. The manager's problem seemed to be the inadequate performance of his supervisors. A visit to the plant and discussion with several people revealed the following situation:

There were six foremen on the day shift and two on the night shift. The foremen were rather young; two were nineteen, four were between twenty and twenty four. However, two were around fifty. They were quite shy-almost introverts. One had a high school education, the others had completed no more than the tenth grade. The median age of the work force was around twenty-four or twenty-five. The firm was located in a small farming community about 30 miles from a large metropolitan area. The firm had been started by local people about three years prior to this time, but it had gone bankrupt and ultimately was bought by an eastern firm and reopened a few months before the consultant's visit. The plant manager had decided that an outsider should be brought in to conduct some training on its own but had not been successful. Books had been purchased for the foremen, but they had not read them. The general foreman was not happy about bringing an outsider. The other foremen were neither or nor against the idea. Only two had worked as foremen before. The others had been appointed foremen within the last several months. The latter group had very little experience in working in industry as operative employers, much less as foremen.

Some people use TRAINING to refer to the effort to increase the ability of operative employees (otherwise called workers) and DEVELOPMENT to refer to increasing the abilities of managers. Training refers to the organization's efforts to improve a person's ability to perform a job or organizational role. In the case of a new employee or an employee placed on a new job, this means the act of providing the person with the knowledge and skill required to perform the job. Training may involve showing a lathe operator how to produce a new part, teaching a foreman how to handle grievances from his men, or improving a plant manager's ability to negotiate a contract with the union. Each of these examples refers to a skill or ability which is related to the person's job duties, or is job-oriented. Thus, training can be thought of as job-oriented, and it should result in an observable change in the behavior of the trainee in that his ability to perform his job is increased. The attitude of the employee is also important in influencing job performance; however, this factor will not be discussed here.

Development refers to the organization's efforts (and the person's own efforts) to increase a person's ability to advance in his organization or to perform additional job duties. One reason development has been commonly used to refer to management development is that most managers have been in development programs in preparation for high-level positions.

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Development can also be thought of as increasing a person's general knowledge related to his job and his ability to adapt to change.

There are some relations among training, development and education. Training is narrow in scope and is mostly concerned with the acquisition of skills. Development is still job-related but it is much broader in scope; education involves the acquisition of knowledge of general nature.

In this material, we will discuss the Training, Development and Employee in a generalized meaning.

2. Human Resources Planning and Assessment of Training Needs

2.1 Human Resources Planning

Human resources planning (HRP) is the process of anticipating and making provision for the movement of people into, within, and out of the organization. Its purpose is to optimize the utilization of these resources and to have available the required number of people with the needed qualifications to fill position opening where and when these opening occur.

Planning is an essential process of management. Because management entails accomplishment results with and through people, the planning process must include the organization's human resources. HRP provides the foundation for establishing an effective human resources management (HRM) functions being performed within it.

Several intangible costs may result from inadequate HRP or the lack of HRP. For example, inadequate HRP results in vacancies remaining unseated. The resulting loss in efficiency can be costly, particularly when lead time is required to train replacements. Situations also may occur in which employees are being laid off in one department while applicants are being hired for similar jobs in another department. This may cause overhiring and resulting the need to lay off those persons who were recently hired. Finally lack of HRP makes it difficulty employees to make plans for effective career or personal development. As a result, some of the more competent and ambitious ones may seek other employment where their career opportunities can be more clearly identified.

As organizations plan for their future, HR managers must be concerned with meshing HRP with strategic business planning. Strategic planning is the process of setting major organization objectives and developing comprehensive plans to achieve these objectives. It involves deciding on the primary direction of the organization including its structure, process, and the interrelationship of human resources. Part of the strategic planning process involves determining if people are available, internally or externally, to implement the strategic organization plan. James Walker suggests five steps for integrating HRP with strategic business planning. These are:

1. Define the corporate philosophy.
2. Scan the environmental conditions.
3. Evaluate the organization's strengths and weaknesses.

4. Develop objectives and goals.
5. Develop strategies.

Two organizations, IBM and GE, have been forerunners in human resources strategic planning. At IBM, this process takes place at three levels--plant, division, and corporate. Each year IBM's HR department develops a five-year HR strategic plan and a two-year tactical plan based on tentative business goals. These goals are formulated only after IBM conducts an internal and external analysis of the company's strength and weaknesses. Major business are not approved until the vice-president of HR concurs with the business plan.

In theory, HRP requires an open-systems concept that relates each HRP function with the environment. As the IBM example illustrates, the HRP process will be integrated with the strategic planning process through environmental scanning. This procedure is necessary because any strategic developed must be consistent with those environmental trends and contemporary issues that may have an impact on the organization. HRP, in turn must anticipate the possible impact of these strategic upon HRP. The growing body of employee law must be closely integrated with HRP goals and functions.

Another environmental influence--demographic changes in population--also must be monitored as a part of HRP. Such changes can affect the composition and the performance of organization's work force. These changes are important because EEO/AA plans must take into account the demographic composition of the population in the area where the organization is located. Further more, with a "maturing" work force in some countries, HRP must consider the many implications of aging employees on recruitment and replacement policies. Other areas requiring consideration are compensation and employee benefits, training, and flexible employment options (part-time, flextime, job sharing, phased retirement, etc.)

HR managers employ a systematic process when undertaking HRP. The three key elements of the process are making forecasts, performing supply analysis, and balancing supply and demand considerations. Careful attention to each factor will assist either top managers or supervisors to meet their staffing requirements.

Employment forecasting is a key component of HRP. It is the HR activity of estimating in advance the number and type of people needed to meet organizational objectives. When concentrating on resource needs, forecasting is primarily quantitative in nature, and in large organizations it is accomplished by highly trained specialists. Quantitative approaches to forecasting can employ sophisticated analytical models, although forecasting may be as informal as having one individual anticipate future HR requirements. Organizational demands will ultimately determine the technique used. However, regardless of the method employed. Forecasting should not be neglected even in relatively small organizations. Forecasting is frequently more an art than a science, providing approximations rather than absolute results. The ever changing environment in which an organization operates contributes to this problem. For example, estimating product or service demand is a basic forecasting concern as is anticipating the changes in national economy. A hospital anticipating internal changes in technology, organization, or administration must factor these improvements into staffing needs. Likewise, forecasting efforts must be in line with the organization's financial resources.

There are two approaches to HR forecasting: quantitative and qualitative. The quantitative, or top-down, approach to forecasting involves the use of statistical or mathematical techniques. It is the approach used by theoreticians and professional planners. One example is trend analysis, which forecasts employment requirements based upon a study of past HR growth. If, for example, 10 new employees were hired, on average, every month for each of the past 10 years, then 120 employees would be required for the forthcoming year. Indexation, or ratio analysis, is forecasting by determining employment growth based on some organizational index. A ratio of employees to sales is a common indexing technique. Another more sophisticated statistical planning method is simulation, which uses computers to forecast future employment needs based upon past patterns. The qualitative, or bottom-up, approach to forecasting is less statistical and attempts to reconcile the interests, abilities, and aspirations of individual employees with the current and future staffing needs of an organization. HR practitioners experienced in training, consulting, management development techniques use this approach. One focus of this method is an evaluation of employee performance and promotability, as well as management and career development.

In both large an small organizations, HR planners may rely on expert forecasts to anticipate staffing requirements. Expert forecasts are the opinions (judgments) of supervisors, department managers, or others knowledgeable about future employment needs. Two variations of this forecasting method, the Delphi Technique and the Nominal Group Technique (NGT), attempt to decrease the subjectivity of individually based forecasts by soliciting and summarizing the judgments of a preselected group of experts. While both the Delphi technique and the NGT have been used effectively to predict staffing levels, the Delphi method is more successfully used to make predictions, whereas, the NGT mainly functions to generate lists of ideas for further discussion. Ideally, HRP should include the use of both the quantitative and the qualitative approaches. In combination, the two approaches serve to complement each other and provide a more complete planning coverage. The contributions of both the theoreticians and the practitioners are brought together in the process.

Once an organization has forecast its future requirements for employees, it must then determine if the numbers and types of employees needed are available to staff anticipated openings. Supply analysis will encompass two sources--internal and external. The process normally starts with an evaluation of the existing supply of employees in the organization. If current employees are not available to fill new openings, then the enterprise will evaluate the external supply of human resources.

An internal supply analysis may begin with the preparation of staffing tables. Staffing tables are a pictorial representation of all organizational jobs along with the numbers of employees currently occupying those jobs and future (monthly or yearly) employment requirements. Additionally, and in conjunction with staffing tables, skills inventories are prepared on hourly employees that list each individual's education, past work experience, vocational interests, specific abilities and skills, compensation history, and job tenure. Well-prepared and up-to-date skills inventories allow an organization to quickly match forthcoming job openings with employee backgrounds. When data are gathered on management employees, these inventories are called management inventories. Both skills and management inventories can be used to develop employee replacement charts. These charts list current jobholders and identify possible replacements should openings occur. Notice that these charts provide information on the current job performance and promotability of possible replacement. Replacement charts are very useful planning tools for locating hard-to find employees or key management personnel.

When an organization lacks an internal supply of employees for promotions, or when staffing entry-level positions, it must consider the external supply of labor. Many factors influence labor supply, including demographic changes in population, national and regional economics, education level of the work force, demand for specific employee skills, population mobility, and government policies. Regional unemployment rates are often considered a general barometer of labor supply. Fortunately, labor market analysis is aided by various published documents.

HRP should strive for a proper balance not only between forecasting techniques and their application, but between the emphasis placed upon demand considerations as opposed to supply considerations. Demand considerations are based upon the forecast and projection of trends in business activity. The supply consideration involve the determination of where and how candidates with the required qualifications are to be obtained to staff job vacancies. Due to the difficulty in obtaining applicants for the increasing number of jobs that require advanced training, this phase of planning is receiving greater attention. Greater planning effort is also needed in recruiting members of protected classes for managerial jobs and technical jobs that require advanced levels of education.

When an organization experiences a demand for workers, several staffing possibilities exist. Hiring full-time employees, recalling those laid off, using temporary employees, or having employees work overtime are options. Apple Computer, Inc., and LyphoMed, Inc. (a small pharmaceuticals company), rely heavily on part-time employees to satisfy employment needs. However, when HRP shows a surplus of jobholders, organizations may use terminations, work sharing, layoffs, demotions, attritions (a gradual reduction of employees) to achieve work force balance. Early retirements are a viable means to reduce excess supply.

Private organizations must consider HRP because they typically have to cope with a large number of internal and external variables. Government agencies, educational institutions, hospitals, and other nonprofit organizations also are concerned with HRP because they operate within established budgets. Many of them also experience long-term, as well as short-term, changes and fluctuations in the demand for their services. Changes and shifts in population, international tensions and conflicts, political pressures, and fluctuations in business cycle can affect the services that a public agency or institution is required to provide, as well as the budget on which it must operate. These factors in turn determine the number and types of positions that must be staffed for any particular period.

The planning techniques and tools are appropriate for use in either private-sector or public-sector organizations.

2.2 The Relationship between Training and Job Performance

Employee training is most frequently associated with human resources development (HRD). It should produce immediate changes in job performance so that supervisors and trainees themselves are able to see the difference between job performance before and after training. Its effects are thus more immediate than development or education.

According to Leonard Nadler (1984), "training is defined as learning related to the present job". It narrows the gap between what individuals know or can do and what they should know or do. As a short-term change effort for improving present job performance, the traditional approach to training is unlike employee education, which prepares individuals for future jobs, and employee development, which contributes to organizational learning by cultivating the collective skills of individuals in group settings.

Performance is defined as the result of a pattern of actions carried out to satisfy an objective according to some standard. It is not the same a behavior, which is observable action. Appropriate job behavior may-or may not-result in good job performance. Performance is equated with results; behavior is equated only with actions taken. Job performance consists of three interrelated elements: individual (who); the activity (what); and the context (where). Individual performance is influenced by ability (what are the individual's capacities to perform?) and motivation (how much does the person feel inclined to perform?). To improve job performance, change must occur for the individual, the activity, the context, or some combination of the three.

Training can improve job performance by improving individual abilities, stimulating motivation, matching individual ability to activity requirements, and/or matching the individual to contextual requirements. However, it cannot change job activities or work context. It changes individuals by furnishing them with new knowledge and skills pertaining to the work.

Training contributes to the realization of organizational strategy for HRD, HRP, and strategic business plans. To formulate organizational strategy for HRD, managers and employees must have a firm grasp of present strengths and weaknesses in job performance. The reason is that planning should begin with information about present conditions. Training needs assessment provides detailed information about present conditions. One way to narrow a gap between present labor supply and future labor demand is to improve the present productivity of job incumbents. In this sense, then, training helps implement HR plans by improving the productivity of people already employed in the firm. In short, training makes better use of existing employee talent. Training contributes to the realization of strategic business plans in two ways. First, it furnishes people involved in formulating plans with skills necessary to do it. Second, it provides new knowledge and skills to employees at each organizational level, so they can go about their jobs in ways leading to the realization of long-term plans.

2.3 Problems with the Traditional Model of Training

The model of training design and delivery described in many books about HR management assumes that job performance is always improved by analyzing how a job is presently being performed, assessing how well individuals are carrying out the job, and designing instruction to encourage individuals to conform to present ways of performing the job. The assumption is that individuals must perform in ways consistent with traditional practices and historical job requirements. In this sense, training thus serves as a maintenance system. It preserves all existing system by teaching people how to conform to policies, procedures, methods, and rules. At best, it fosters consistency by obtaining uniform behavior regarding policies and procedures intended to formalize or institutionalize all aspects of organizational behavior. In many cases, of course, that is true.

On the other hand, there are cases when training should help anticipate future job requirements utterly unlike those that have existed in the past. Instead of narrowing gaps between actual and desired job performance at present, the focus should be on gaps between present or actual performance, and future or desired performance. Sometimes, an organization seeks new ways to do things: new approaches and innovative structures and ideas. It requires system change as well as individual change. When used in this way, training becomes an adaptive system. It tends to achieve environmental constancy by bring the external world under control. Instead of bring individual performance into compliance with organizational policies, procedures, work methods, and cultural requirements, training becomes a vehicle for anticipating future environmental requirements. As environmental conditions change, the organization and individual gradually learn how to behavior so as to meet new requirements created by those changing conditions.

2.4 Strategic Training

Strategic training prepares employees for changes in job requirements wrought by external environmental conditions or by organizational policies, procedures, plans, or work methods. It is based on predictions of future job requirements stemming from strategic necessity. Strategic training requires HRD practitioners and managers to envision what future job performance should be under future conditions and prepare people for those conditions. In this sense, then, training is a method of changing the "organizational paradigm", the culture or metarules governing behavior in the firm. It is a vehicle for realizing a vision of what individual performance should be under relatively uncertain future conditions. Hence, strategic training is a tool for organizational and individual transformation, renewal, and creativity. Its focus is on working smart, not on working hard.

Much like its traditional counterpart, strategic training contributes to formulating and implementing organizational strategy for HRD, HRP, and strategic business planning. However, strategic training is useful in ways different from its traditional counterpart.

To formulate organizational strategy for HRD, managers and employees must envision the future. What are job conditions going to be in one year, two years, five years, and as business plans change? If people anticipate the future, they positioned to take advantage of opportunities and advert threats posed by the changes it brings. This principle applies as much to individuals in their jobs as it applies to organizations in their interactions with the external environment. To formulate organizational strategy for HRD, managers and employees need training to envision the future and plan in anticipation of it. Since future conditions are not fixed, like the past, envisioning them is a highly creative and subjective process. Future training needs are identified in the context of a vision of what future job requirements will be or should be. Implementing organizational strategy for HRD is also highly creative and subjective. Since the future may not unfold as expected, HRD practitioners must plan for contingencies to cope with otherwise unexpected problems. To plan for contingencies, both HRD practitioners and operating managers may need instruction in the principles of contingency planning.

To narrow the gap between present labor supply and future demand, managers can do more than just make better use of available supply. They can also change the allocation of work, which may affect the numbers and skills of people needed in the future; automate; and change the kind of people recruited into the firm. There are other strategies too: reduce turnover and absenteeism; change the distribution of full-time and part-time employees; and introduce innovative practices like job sharing or flexible work hours. Any of these strategies will, of course, influence job training needs. In fact, HRD practitioners and managers may need to predict the likely future effects of each change, so as to anticipate future training needs. Strategic training is necessary to avert future shortfalls in the supplies of skilled people. Examining past requirements or projecting past needs into the future are equally inadequate for this purpose. Implementation of HR plans calls for action on several fronts at once: recruitment of skills from outside the organization; contracting for skills on a short-term basis; and training employees for skills they will need to implement strategic business plans.

Strategic training contributes to strategic business planning in two ways. First it furnishes new, perhaps better, methods of doing work. Second, it prepares employees at each organizational level to carry out their jobs in ways consistent with future job requirements. The process of formulating strategic training may reveal issues appropriate for consideration in formulating business strategy. The process of implementing strategic training may also produce new information of value in subsequent organizational strategy-making.

3. Techniques of Personnel Selection

3.1 Selection Process

Information is very important in the process of personnel selection. A prerequisite for accurate selection is a precise determination of the skills, abilities, aptitudes, etc., needed by a person to be successful on the job. Many problems are associated with the qualifications necessary; one problem is defining success on the job. Success on a job may be the result of several factors. Different people may be equally successful on the job but may vary considerably in their qualifications. For example, two secretaries may have the same total output per day, but one may achieve this through a combination of extremely accurate, but slow work, whereas the other may be extremely fast, but inaccurate. Another example would be two salesmen with identical total sales. One salesman may succeed owing to his personality and aggressive sales pitch, whereas the other may carefully select his customers, develop his presentations, and be persistent. The person responsible for selection needs to know not only the attributes required for a job but also how to measure them. Some attributes are necessary for some jobs but only desirable for others. The person requesting a new employee should indicate, if such information is not available from the job description, which attributes or skills are essential and which are a plus factor. In some cases, the absence of some certain qualifications or the presence of certain negative factors would disqualify a person for job. For example, the lack of a driver's license would cause a person applying for the job of taxi driver to be rejected. Color blindness or loss of hearing would be a negative factor in many instances. The degree of accuracy in selecting employees who are successful on the job can never be any greater than the degree of accuracy in describing the attributes and skills needed for the jobholders.

Another factor to consider is the trade-off between training and ability. If an organization is trying to hire a person with certain skills and is having difficulty in finding such a person, it might consider the comparative costs of recruiting and selecting a completely qualified person, of training a present employee, and of hiring a person with the necessary aptitude and training him for the job. The effect of a wrong selection decision should be considered in determining how detailed or elaborate the selection process should be for each type of position. The two main types of mistakes made in selection decisions are false positive and false negative. A false positive error occurs when the person doing the selection predicts an applicant will be successful on the job, and he is not. A false negative error occurs when it is predicted wrongly that an applicant would not have been successful. In the selection of an astronaut or airline pilot a false positive error might be quite costly. A false negative error might result in the loss of a potentially successful employee. The number of applicants in relation to the number of persons needed to be hired is known as the selection ratio. The selection ratio can be expressed as 10 to 1 or as 10 percent; both refer to ten times as many applicants as employees needed. The greater the number of applicants with respect to needed employees, the greater the probability of finding a qualifies person. The term "base rate" refers to the degree to which the skills or attributes wanted are found in the general population. The lower the base rate, the snore difficulty it becomes to attract applicants with the desired qualifications, and more care should be devoted to the selection of recruiting methods.

Here is an example of steps in the selection process. The West Virginia Pulp and Paper Company (Westvaco) has an unusually effective recruiting and selection procedure for its marketing trainees. It has achieved an acceptance rate of 80 percent and a first-year turnover rate of only 7 percent. Westvaco concentrates on recruiting discharged junior officers of the Armed Forces and young second job seekers. Nearly all its applicants are referred to it by selected employment agencies across the county. These agencies refer only the top ½ percent of their clients, after an extensive prescreening process. Westvaco used a multi-interview technique to assess the candidates' traits and abilities and whether or not their goals would be compatible with the company's program. The personnel department conducts the first interview, in which it filters out some applicants and determines whether the remaining applicants have the necessary qualifications for a marketing trainee. Only one out of five is sent to the next step. The marketing personnel development department evaluates the applicants and passes them on for evaluation by representatives of sales, marketing research, etc.. There applicants are given tests and interviews by a testing organization. This last step is a final check before the applicant is offered a job, and as noted before, 80 percent accept.

The selection process can be thought of as a series of steps or stages during which additional information is secured about the applicants. At each stage, information may be revealed which will cause the applicants to be rejected--a procedure which may be compared to a series of successive barriers which the applicant must pass. This procedure is designed to eliminate the unqualified at any point in the process, thus saving the cost of sending an applicant through all the steps. However, some firms use a different procedure--a multiple correlation process. In these firms, an applicant goes through all the steps. The hiring decision based on information gathered during the entire process.

In a newsletter, the Klieg Institute for Aptitude testing states that its experience over twenty-seven years and thousands of clients suggests that most poor hiring decisions are the result of inadequate information. The Institute suggests the following total assessment program:

A realistic analysis of the requirements of the job to be done.

2. A sound application blank--fact-finder which help you to learn about the man's background and life history.
3. A well-conducted interview--explore the facts and get at the attitudes of the man, and of his family, toward the job and the company.
4. A reference check--how do previous employers feel about the man? Above all, would they rehire him?
5. A physical examination--health and stamina are vital factors in success.
6. Psychological aptitude testing--to explore the subsurface area and get an objective look at a man's suitability for the job.

According to the report of the Bureau of National Affairs of United States, there are six steps in a typical selection procedure: preliminary screening; application blank; interviewing and testing; reference check; employment decision; and a physical examination.

Step 1: Preliminary Screening. This can often be done by the receptionist or secretary in the personnel department in large organizations. Preliminary screening essentially consists of informing applicants, frequently drop-ins or persons coming to the organization on their own initiative, what kinds positions are open, if any. Usually the person will ask a few questions of the applicant, about the type of work experience he has had and the kind of job he is seeking. In large organizations, preliminary screening may include having the applicant fill out a brief application form and assigning him to the propriety interviewer.

Step 2: Application Blank and Other Biographical Data Forms. The application blank or form usually requires the applicant to provide data about his background, work experiences, personal and employer references, and other similar data. Some companies analyzed the information on the application blank and determined statistically its relation to later success on the job. The answers are weighted according to their relationship to job success. The American Telephone and Telegraph Company (AT & T) analyzed the records of some 17,000 college graduates it had hired and found that success as measured by the level of salary obtained could best be predicted by the applicant's rank in his college class with some adjustment necessary for the quality of college attended. Scott and Johnson found that the weighted application blank proved just as effective as, and much simpler than, a multiple-regression technique for weighted-item responses for selecting unskilled workers who would remain on the job for a long time. Convenience to work and 'family responsibility accounted for most of the variance in the criterion of tenure

Various researchers have tried several methods of using biographical data in predicting job success. Marshall Brenner selected 100 employees of Lockheed California who had been employed at least two years, had begun work with the company within one year of graduation from high school, and had attended a Los Angeles high school at least two years. High school teachers were requested to fill out a questionnaire about their former students. The ratings obtained from these teachers were compared with supervisors' ratings of the employees' performance on the job. The correlations were significant and the relations were better than those obtained using aptitude tests. Absenteeism on the job was found to be significantly related to absenteeism in high school. The teachers were able to make discrimination of work habits and cooperative behavior which proved highly predictive of later on-the-job behavior.

Background data have been used to predict success for salesmen and executives. Bichs and Williams investigated the predictive ability of background data and found that financial responsibility, early family responsibility, and stability were useful predictors of sales success. This was true not only of salesmen but also of district managers. The relation of the factors and sales performance tended to be linear; i.e., low scores on the three factors were associated with low sales performance, and high scores usually meant high performance. Another study compared the ability of personal data and objective test scores to predict the success of young executives. Education was the only variable, among thirty-one tested in this study, with sufficiently high correlation to help predict success.

When one considers the number of items of biographical data which would be used and the number of possible combinations of this items, it is soon apparent that it becomes too time-consuming to perform any meaningful analysis by hand methods even when using calculators. It was only natural, therefore, to expect that someone would turn to the computer for aid. The Metropolitan Life Insurance Company of USA did this. In an attempt to identify and determine the predictive ability of biographical data, some of its researchers selected 1,525 life insurance salesmen who had completed at least one year with the company during 1963. Form application blanks, data were recorded for the factors of age, prior weekly salary, sales experience, marital status, number of dependents, and education. Each factors was divided into single, married and others. There are twenty-six intervals in all for the six factors or variables. A computer program was used to examine all possible combinations of these twenty-six intervals. The various combinations were ranked or reported in the order in which they accounted for the difference in sales production (first year sales of insurance). Prior income was reported as the most important variable; next was the number of dependents. These two variables accounted for nearly all the explicable variance in sales. By simply separating the applicants into those with prior weekly income above and below $90, the result is two groups with a difference of $46,000 in average sales production. The difference between the lowest group (prior salary less than $90) and the highest group ($130 or more prior salary and three or more dependents) is over $100,000 in sales per year.

Another method of using biographical data is the biographical information bank, also known as a personal information bank, or life history antecedent questionnaire. The biographical information bank consists of a series of statistically weighted questions about the applicant's background. These blanks are usually developed and validated by a trained psychologist, but they can be scored and interpreted in the same manner as most objective tests. These banks have been found to be the best single predictor of success by a number of companies. Standard Oil of Indiana of USA is reported to have dropped its testing in favor of banks for some of its positions.

Step 3: Interviewing and Testing. The next step in the selection process is usually an interview by some one in the personnel department (in those organizations with personnel department). This interview is then usually followed by a test or battery of tests, however, in some organizations the testing comes prior to the interview. The applicant may be sent to the department or unit in which he will work for interviews by the department manager and perhaps others. The topics of testing and interviewing are mentioned here only to indicate their place in the selection procedure.

Step 4: Reference Checks. A survey by the Bureau of National Affairs of USA revealed that 93 percent of large and 87 percent of small companies check previous employment records, and 41 percent of large and 38 percent of small check personal and/or credit references. A telephone call is much quicker than a letter and usually yields better information. Instead of calling the personnel department of the former employer, some firms call the applicant's former supervisor; the experiences of these firms indicate that this method yields more reliable information. Some organizations have stopped trying to check reference themselves, preferring to have a full background investigation made by a firm which specializes in this work. The validity of recommendations of former employers has been the subject of at least two published studies. The first showed that an "employment recommendation questionnaire" was of little value in predicting the performance ratings which the applicants would receive on their new job. In another study conducted ten years later, ratings by former employers or other references of new teachers were correlated with their end-of-year ratings by their new principals. The results showed very little correlation; in fact, compared with reference ratings, years of teaching experience were as good an indicator, if not a better one, in predicting end-of-year evaluations.

A story on the Wall Street Journal reported the problems some firms were having in checking the references of applicants. A college official was quoted as saying that the college received calls frequently from employers inquiring about an applicant's college record. In many cases, it was discovered the applicant lied about his college work. The story is told about one quite clever person. On his application he list a B. S. from MIT and a Ph.D. from Yale. The Boston electronic firm where he had applied for work check his references and found them correct--or so they thought. Later on he was considered for promotion and had to have a security clearance. A federal investigator turned up the fact that he had never attended Yale. He had simply searched the rosters of schools until he found Ph.D. graduate with his own name.

Some employers have turned to the use of polygraph examinations as a means of trying verify background data. Many people oppose its use, as all unions do, and several states have outlawed its use in private industry. Some employers report their turnover and internal theft losses have been reduced since they started using the polygram as a screening device. Some personnel directors use polygraph tests as a means of speeding up the employment decision. After preliminary screening and interviewing, if the personnel director thinks he will offer the applicant a position, he tells the applicant that he is being strongly considered for a job and the only thing lacking is a check of his references. The applicant then is given a choice: either to take a polygraph examination and, if no problems arise, come to work next day, or to wait for one week while the firm check references through telephone calls and letters. About 99 percent of the applicants volunteer to take the polygraph examination. Another personnel director thinks that using the polygraph examination in lieu of reference check gives him a better chance of hiring an applicant. His reasoning is that by using the polygraph examination instead of reference check, he can offer an applicant a job before he leaves the firm. In a tight labor market, if he has to wait several days while references are checked, the applicant may be offered a job by another firm.

Step 5: Employment Decision. After information has been gathered about applicant, someone must evaluate it and make the final decision to accept or reject him. This decision is normally made by the supervisor for whom the applicant will work; this is especially true for higher-level jobs or jobs calling for unskilled workers. In some organizations, the personnel department may screen out applicants who it thinks will not fit the job, and send the two or three best applicants to the supervisor. Another method is for the personnel department to send all seemingly qualified applicants to the supervisor, who then hires the first one he likes. The applicant should be told when the decision will be made and should be informed promptly of the decision, whether favorable or unfavorable. He should not be told "Don't call us, we'll call you" if no job opening exists or if he is not really being considered for the job.

Step 6: Physical Examination. Physical examinations are required by most firms. The two main reasons for the physical are to see whether the employee is physically able to perform the job and to discover existing disabilities to avoid being liable for unfounded compensation claims later. The cost factor usually is what causes organizations to wait until the applicant is hired before sending him to take a physical exam (i.e., why pay for a physical examination of someone you do not hire?). The thoroughness of the examination may vary with the demands of the job. Applicants for certain jobs should be tested for color blindness, visual acuity, or hearing.

3.2 Selection by Computers

One of the earliest reported attempts to use the computer in personnel selection was made by International Business Machines corporation (IBM) in 1959. Personnel data from 300 company offices were stored in a data bank set up at the Armonk Location. Years later there was a story about the company's new "Recruitment Information System" (IRIS for IBM's Recruitment Information System). The system used a 1410 computer, and one of its key points was a twelve-page Data-Perk questionnaire used to gather the data for a skills inventory. The company was trying out the system on itself first, although it was also talking to other companies about its use.

In later 1969, at least 150 personnel agencies, members of National Personnel Associates of USA, were hooked by telephone into a data bank in Detroit of USA. The data bank was owned by Employment System, Inc., who also leased it to many other clients. Other agencies have specialized in a particular type of client, e.g., Re-Con System, Inc., which is oriented to college students. Computerized Employment Center, Inc. of USA, advertises itself as a clearing house for qualified personnel. The service is by subscription on the part of the employers, who fill out a job order whenever they are in need of an applicant. The job order is matched against applicants' resumes in the agency's computer; any personnel profile which matches the order is sent to the employer, who then contacts the applicant. Computerized Employment Center also maintains a data bank of vacancies which have been listed by employers. When an applicant first sends in his resume, it is matched against this list. In the event a match occurs, the employer with the vacancy is sent the resume of the applicant. The firm claim that it is a pioneer in developing a 100 percent computerized matching program which requires no counselors. in an ad in one of the local newspapers, the firm listed some of the vacancies in its client firms. The list ranged from a clerk typist at 8 salary of "to $350" to several engineering jobs, two of which showed salaries of$25,000. Another firm uses computers, but it also uses counselors in its process. The f rm, management Recruiters, Inc., is one of over ninety personnel agencies in the United States of America specializing in recruiting EDP sales and technical personnel. The agencies have access to an IBM 360 computer with over 50,000 profiles of men throughout the country in its data bank. Several large business firms have their own internal data bank.

There are several state employment services systems in the United States of America. The Baltimore branch of the Maryland State Employment Service was the first large test case of the use of computers by state employment service in. The test was pronounced a success in 1969 after a year's trial. The main feature of the system was a daily computer printout (around 400 pages) listing from 9,000 to 13,000 jobs in the Baltimore area. This printout or "job book" was available each morning at some seventeen branch offices where some two hundred interviewers and supervisors used it in counseling job seekers. It was estimated that 75 percent of the area employers with twenty-five or more employees used the service. The firms would have to supply 30 to 40 bits of data about each job, such as pay, experience required, skills needed, and whether union membership was required. The test was partially subsidized by the Labor Department, whose officials stated that the job book was very helpful in securing jobs for the culturally disadvantaged applicant. The Labor Department also started a fully automated system on a statewide basis in Utah in January 1969. The Secretary of labor of United States announced late in 1969 that the Department planned to have job bank systems in fifty-five cities by the middle of the following year and panned to convert them to a fully automated system as soon as possible. Another example of the use of the computer, unrelated to state employment agencies is that of the Governor of Oklahoma. He used the computer to printer out the names of those graduates from the state's universities who had taken jobs out of the state but were willing to return if they could find the right job. These printouts, arranged by job categories, were provided to perspective employers or firms who were thinking of moving into the state. The program was aptly titled "Bring Back Our Oakies".

Although many people have praised the computer as an aid in selecting employees, there are numerous critics with very good questions about the whole process. in a speech before the twentieth annual winter meeting of the Industrial Relations Research Association, Prazier Kellogg discussed some of the problems involved. One of the most important is the determination of the information content in the system. For example, there is a problem not only describing skills but also of indicating how relevant these skills are. A common set of descriptors may not be available until after a system has been in operation for some time. Kellogg illustrates another problem by describing a training program for disadvantages youths in the Bedford-Stuyvesant section of Brooklyn. The youths were trained for jobs in the food service industry, ranging from kitchen helper to first cook. The youths expected to start lower than the job as first cook, but they were impressed by promotion possibilities. However, it appeared that rapid promotion was possible only by moving from one firm to another rather than within one firm. Thus, some employers might feel that being a part of a computerized job-matching system might lead to a loss of their valued employees. Some private employment agencies have examined the pros and cons of the computer and have turned it down. Common complains are that it costs more money than it is worth and it is too difficulty to control errors in input. Another complain is that the systems have been designed by people expert in the ways of the computer but not in the ways of recruiting and selecting employees. A Baltimore employer states that he used the state employment service's job bank, but he has better results from the classified ads. Some employers complain of the lack of the personal touch which they formerly had when they discussed their needs with people whom they knew in the agency. The first report on the Utah system stated it was not as reliable as a goo(l interviewer in matching jobs and applicants. Despite all the problems and criticism, it is probable that continued efforts will be made to use the computer's tremendous ability to store and manipulate data to help in the recruitment and selection of employees.

3.3 Evaluation of Selection Methods

A few large companies have been engaged in long-term research program aimed at improving the ability to select personnel--usually managers. Among this group are such firms as Sears, Roebuck and Company, Standard Oil Company (New Jersey), General Electric Company, and American Telephone and Telegraph Company. Most of these programs are related to the ability of tests to predict success. However, some of their research relates to other topics. For example, AT&T learned through a long-term study of managers that the first job a college graduate has with the company will have a lasting effect. If the graduate has a challenging job as his first one, he is likely to show a high level of performance later, even if he is on a dull job. The reverse was also shown to true. Other findings indicated that a definition correlation existed between the rank in college class and the rank in salary bracket had been in the top third of their college class. also, a graduate in the lower third of his class was twice as likely to be in the lower third of the salary bracket as those in the top of the class. Some studies at General Electric Company indicate that many who become successful in management do not begin to show much promise until they are in their thirties. This finding and the one about the influence of a person's first job suggest that the prediction of managerial success may be quite complicated and frustrating. Consider, for example, the researcher who is trying to validate a test he has developed to identify applicants who will be successful managers. What might one expect find if some of his experimental group were assigned first jobs which were dull and if some were "later bloomers"?

Many managers assume that if a college student works for an organization as a summer intern, the opportunity to observe him at work will be valuable in later deciding whether to offer him permanent employment. This assumption was tested by Tosi and Starr, who concluded that the opportunity to observe the person as a summer intern provided no increase effectiveness in selection, using the level later attained by the applicant in the organization as the criterion of success. Korman reviewed the literature on predicting managerial success and concluded that objective personality inventories have not shown much validity in predicting success, with a possible exception of a protective measure of managerial motivation which was developed by John D. Miner. Another conclusion was that personal history data can aid in the prediction of success for first-line supervisors.

Although much is known about some selection procedures and extensive research has been done, much remains to be learned. Any organization which must hire very many employees each year should consider taking a look at their selection procedures to see whether they are helping select the most qualified applicants.

One of the first items the organization should evaluate is its application bank. What information is obtained by the bank, and is this information helpful in forming a opinion about the applicant? A more basic question is to determine how interviewers (or the person who makes the hiring decision) decided to accept or reject an applicant. Do they base their decision mainly on positive items (skills, experience, etc.), or on negative items (subject to draft, has never worked on the specific job, has moved from job to job frequently, etc.)? Is this information obtained efficiently and in sufficient quantity?

If the firm check references, is it by telephone or by letter? Have these references been useful? If preliminary interviews are not used, would their use reduce the number of obviously nonqualified persons who fill out the longer application bank, take tests, and Waste the interviewers time? How many applicants were rejected at each step of the selective process, and how does this compare with the previous year?

Perhaps the best evaluation method would involve requesting the person who makes the hiring decision to make some sort of prediction about the applicant's success on the job. The decision maker could record his prediction (and the reasons for it) for each applicant he hires or recommends for hire, and later compare it with actual results.

4. Personnel Achievement Evaluation

4.1 Why Evaluate Personnel Achievement?

Why, in view of the many problems suggested, should one attempt to design, install, and administer a performance evaluation plan (personnel achievement evaluation plan)? This question brings us face to face with the question of whether or not to have performance evaluation in the first place. It seems that managers do evaluate whether or not they have adequate evaluation plans to guide them. Since evaluations are made anyway, the only question is whether or not there should be a formal, systematized plan to replace the existing plan.

What are the objectives of employee performance evaluation? It is easy for managers, especially personnel managers, to become intrigued with all the various system of evaluation and completely forget the goals or objectives to which the various programs and systems are related. Each job should be clearly related to the objectives of the organization. The objective for each job is found stated in written job description, and the job's relation to the large organizational unit of which it is a part will often be clearly stated in the description. A specific job, however, may be merely one step in the career ladder of jobs of an employee, and an employee's performance of particular job may be nothing more than one step in an employee development process that will lead the employee to some higher-level job in the career ladder. Thus, employee performance evaluation may be considered in the light of two important objectives--the development of employees and the reward of employee productivity. The development of the employee's ability to perform some future job as well as improvement of his ability to perform his present job is a second objective for employee evaluation program. The objective of rewarding employees in relation to their productivity on their present job is also a sound objective.

The kinds of rewards important to one person may be unimportant to another. If managers are to exercise some influence upon the job behavior of employees and thus stimulate high productivity, they must understand the needs of their employees. It is the unfulfilled need that motivates. For example, the possibility of receiving an additional small increment of money may be of considerable value to a man who has little economic wealth. To another, whose economic wealth is great, an additional increment of money may serve no economic need whatsoever; however, an additional increment may be important to him in term of its value in relation to his recognition and status needs. Money, as a common denominate, may serve many needs, and of course pay has a major impact upon industrial behavior. On the other hand, a man who wants responsibility, rather than pay, might actually be offended by an increase in monetary rewards. This would be the case, perhaps, if he actually wanted more power and responsibility and received money instead. This example and the one above illustrate the importance of understanding employee needs and the importance of relating rewards to employees' needs as well as to the objectives of the job. One of the greatest values to be derived from a performance evaluation program is the benefit flowing from a clarification to all employees of organization objectives. When objectives are clear and accepted, and when rewards are related to both the needs of employees and organization objectives, then a climate for high employee motivation exists.

At the beginning of the performance rating period the objectives of each employee's job should be assessed in a systematic manner and written down for all to see. Those who will be conducting the appraisals should then counsel, coach, and assist the employee tn accomplishing his own personal objectives as well as the job objectives which must be related to the organization's objectives. This means that employee performance evaluations must be a continuous process. Formal evaluations may be held at periodic intervals in order that some control may be established to ensure against failure of supervisors to evaluate at all. However, effective evaluation is more like good coaching, and the coach does not wait until the same is over to give counsel. He gives counsel whenever it is needed. Motivated behavior is goal-directed behavior; therefore, performance goals must be constantly in view of the employee, and timely feedback to the employee about how well he is doing must be given so that he is continually challenged to meet performance standards. This means that performance standards must be correct and visible, and that performance results must be compared with par, whatever par may happen to be. Preferably, the employee will receive information and do whatever he can to improve his own performance. Preferably a climate will be developed so that the supervisor's role will be supportive rather than threatening. Obviously, sound selection decision must precede performance evaluation. A man who lacks requisite abilities cannot perform regardless of how god the environment may be.

Performance evaluations can be used for employee improvement. Few organizations have attempted to assess the man requirements of various jobs that make up specific career ladders. Until this has been done, employee performance for improvement of employees, in terms of demands of future jobs, can be little more than a short in the dark. For example, experience in the performance of a supervisory job may have little relevance to future performance on a high-level job requiring much in the way of information handling though little in regard to the supervision of others. Employee evaluation for purposes of the improvement of the employee implies knowledge not only of the man requirements of jobs but also of the process by which manpower may be developed. If these ingredients are lacking, then the evaluation process can be a travesty, a process that creates more problems than it will solve. Unfortunately, this often happens, and this why most managers are unhappy with traditional employee evaluation processes. For example, suppose that a particular job in the international division of a corporation requires an incumbent who can speak the language of the natives of the foreign country in question. Furthermore, assume that a positive attitude toward a particular race is an absolute requirement for effective job performance in that country. Placing a particular employee on a job in the country in question and on a job that requires him to speak the foreign language of the country to which he is assigned may be an appropriate development process in terms of the acquisition of language skills. In terms of attitudinal change, another process might be far more effective. For example, sensitivity training, in a laboratory setting, or some process other than job oriented training might more effective for purposes of attitude change. Performance evaluations may contribute to employee development; however, this process is no panacea for all ills. Attitudes held by employees cannot be changed easily, and if an employee does not want to change his attitudes, then the tusk of changing them becomes almost insurmountable.

In summary, then, a great deal of thought needs to be given to the objectives of performance evaluation in terms of its relation to employee development. The performance appraisal process is just not suitable for all manpower development objectives. Properly used, the process is valuable for the transmission of information about present and future jobs, and the development of certain skills can be induced without too much difficulty if the employee has ability. Processes of attitudinal change, however, will probably have to take place of the job in most instances, unless the change process is directed by those at the highest level of the organization. Organizations may have to be changed first before employee attitudes can be changed and newly acquired attitudes must be supported; otherwise they will not become permanent.

4.2 Employee Performance Evaluation

Performance evaluation, simply defined, is the process by which attempts to determine how well an employee has performed what management has asked him to do. Information collected by the performance evaluation process may influence the following decisions: discharge, demotion, transfer, promotion, pay, training and development, and other related personnel decisions. The vital importance of these decisions to the welfare of both employee and organization demands that an evaluation process be created that will produce valid and reliable information for decision-making purposes.

An example drawn from an arbitration case will illustrate the importance of the evaluation process. A motor freight organization negotiated a contract with a white-collar union. An unusual clause in the contract granted a senior employee the right to be "bumped upward" in the event that his job should be eliminated by technological change. A job was eliminated, and a fifty-five-year-old woman with ten years' seniority who had been performing the abolished job demanded that she be placed on a higher-rated job titled cashier. Previously, for some ten years, she had been a switchboard operator. The contract also specified that an employee bump into a higher-rated job would be given a thirty-day trial period, under proper supervision. If, however, performance was completely unsatisfactory seven days after bumping, the contract specified that the company could transfer the employee to another job. Seven days after bumping into the higher-rated job, the elderly employee was transferred to the night shift on the grounds that she was not competent to perform the duties of the job titled cashier and no other job for which she was qualified existed on the day shift. She promptly filed a grievance which the company and union could not settle, and the issue was eventually submitted by the parties to an arbitrator. A hearing was held in a downtown motel. The terminal manager, assistant terminal manager, and personnel manager represented the company at the hearing. The employee with the grievance was also at the hearing. The president of the local union and the international representative from union headquarters represented the union.

The arbitration hearing begin at 8 A.M. and lasted until 5 P.M. of the same day. The company contended that the job of cashier was not actually a higher-rated job than the job eliminated even though the salary rate for the job of cashier was higher than that of the switchboard job which had been eliminated. In supporting this view, the company compared the responsibility, skill, working conditions, and educational requirements of the two jobs. The company also contended that the performance of the elderly woman on the job of cashier was completely unsatisfactory during the seven-day period. The union's position was that none of the jobs of the organization had ever been evaluated by the company; that the responsibility demands of the cashier job made it higher-rated job of switch-board operator; that the company had never established performance standards for the job of cashier; that the performance appraisal conducted after seven-day period was arbitrary and capricious; and that proper supervision had not been given to the employee on her new job. This position was supported by the arbitrator, who directed that the employee be reinstated to the job of cashier and given a thirty-day trial under proper supervision.

This example illustrates both the problem of job evaluation and the problem of employee evaluation. Was the eliminated job of higher value than the job of cashier? Was the employee's performance "completely unsatisfactory" on the cashier's job? In either case value judgments are involved. To judge means to apply a set of values, and value judgments without clear, sharp, and public standards are irrational and arbitrary. They corrupt both the judge and the judged. Value judgments made without standards will often be held by arbitrators to be arbitrary and capricious.

Performance evaluation is an attempt to appraise how well an employee does what he has been asked to do. This statement of course implies that management has properly designed, properly defined, and properly described the job and has properly supervised the employee. It also implies that management has established performance objectives, performance standards, and a systematic and rational process for collecting information about employee performance for some given period of time. Peter Drucker states, "No matter how 'scientific', no matter even how many insights it produces, an appraisal that focus on 'potential', on 'promise'--on anything that is not proven and provable performance--is an abuse". The duties and responsibilities of an employee are found in his job description.

In practice, one of the most serious errors occurring in the process of employee evaluation (performance evaluation) is the failure of managers to distinguish clearly in advance of the appraisal between the process of job evaluation and the process of employee performance evaluation. Under a properly administrated employee performance appraisal program an employee performing the job of custodian should have the opportunity to score as high on a rating scale as an employee performing the job of comptroller. If a custodian's performance is superb, then he should receive a maximum rating (100 percent). In practice, employee performance ratings often seem to correlate highly with job value ratings. This suggests that those conducting the ratings may actually be rating the value of the job rather than rating how well employees have actually performed the job to which they have been assigned. Thus, in our discussion, we will turn to job evaluation.

4.3 Job Evaluation

Job evaluation is the process by which jobs in an organization are appraised. Simply stated, then, when we evaluated jobs, we are assessing the relative worth of a given collection of duties and responsibilities to the organization. We perform this process because failure to do so impedes management's attempt to maintain high level of employee productivity and high levels of employee satisfaction. If job values have not been systematically studied, very likely jobs are not properly priced. High-valued jobs may be receiving less pay than low-valued jobs. When employee feel that this is happening, they become dissatisfied. They may leave the organization, reduce their efforts, or perhaps adopt other patterns of behavior detrimental to the organization. In the American society considerable attention is paid to the value of a job. For example, reward decisions are greatly influenced by value judgments about job worth. If an employee with a doctoral degree is working alongside an employee with little education, and both are performing the job titled custodian, what should each be paid? If the position are identical, equity in our society demands that the two employees be paid the same basic wage or salary, regardless of the difference in their educational background. In this society, then, great attention is given to the value of a job when wage and salary rates are being decided. We pay a man for what he brings to a job, i.e., education, training, and experience only if these are related to the man requirements of the job to which a man is assigned. At the same time, we all realize that the productivity of two employees who are performing identical jobs may vary widely. Assuming a given quality of product or service produced, a particular employee may produce twice as much as another. Certainly, then, the more productive employee should receive a total reward greater than the reward given to the less productive. Rewarding high performance behavior tends to reinforce this type of behavior. Job evaluation encourages employee productivity.

In summary, society demands that the performance high-valued jobs be recognized by the payment of greater rewards than those paid for lower-rated jobs; and society also tells us that a more productive employee on some given job should receive higher reward for his efforts than a less productive employee. Society does not tell us what process to use when making a decision about how well a man has actually performed the tusks, duties, and responsibilities to which he has been assigned. And, of course, individuals often work as a team; and they often work with machinery; therefore, individual productivity cannot always be measured. Sometimes, high productivity cannot even be observed, much less measured. For example, the productivity of those performing mental work of a highly creative nature cannot even be observed. Nonetheless, decisions about employee performance are always made by someone; therefore, whether or not there will be an employee evaluation program is not the question. The only question is, what program will be adopted? If those decisions are not the result of the use of rational process, employees will seldom perceive them to be just and equitable. Employee perceptions about the fairness of decisions related to job values and employee performance influence an organization's ability to attract, hold, and motivate employees to high levels of productivity. Because of this, managers must give careful attention to both job evaluation and employee performance evaluation.

In a job evaluation process, there are three items: market value; qualitative processes of job evaluation; and quantitative job evaluation process.

Item 1: Market Value. In order to attract, hold, and motivate employees, an organization must provide a compensation package of the correct magnitude. In other words, the wage and salary and related fringe benefit levels must be in tune with the market. To explain, if there are many jobs of a given description in other organizations for which the pay is $5 an hour, a manager would be foolish to offer a rate of $3 an hour for a like job in his own organization. There is obviously some minimum compensation level that a firm must establish for its jobs if it hopes to attract and hold the quality of employees it demands. Thus, one manner of establishing job value is simply to survey the market prices being paid for a given job and then compute an average of all those rates found. Immediately, however, we must ask this question: Will such a process give us the "correct" value for this job?

Few organizations, if any, base their actual wage and salary rates upon the results of wage and salary surveys. A particular job will vary in value from one organization to another. To one organization, the job of machinist may be so important that the proper performance of this job determines whether or not the organization will survive. To another organization the same job may be of little importance in terms of the organization's ability to survive. Market value, then, is not a good yardstick to be used for evaluating jobs. Market value may influence judgments about job values; seldom, though, does such information play a determining role in the process of pricing the job.

Item 2: Qualitative Process of Job Evaluation. The job ranking process and the classification process are two qualitative methods commonly used to evaluate jobs. Seldom will all the jobs in an organization be evaluated. Rather, an evaluation will be made in a job cluster. Examples of clusters are factory jobs, clerical jobs, and managerial jobs.

The ranking method ranks the jobs in a job cluster from highest to lowest. When the number of jobs to be evaluated is small, perhaps fifteen to twenty, let us say, each job may be compared with each other job in a gross manner, and then a simple rank order of all jobs may be established. If employees are brought into this process and permitted to participate in the ranking decisions, the results will perhaps be perceived to be equitable. Either of two methods may be used to rank jobs: the card-sort method and the paired-comparison method. In the former, those doing the evaluating will be given a card for each job. This card will contain information such as job title, job description, and job specifications. After examine this information, the ratters simply rank the cards (jobs) from highest to lowest. If the job are few in number, this process may work well If a large number of jobs are being evaluated, it may be desirable to categorize the cards first into three stacks representing high-valued jobs, medium-valued jobs, and low-valued jobs. Then job within each pile are ranked. The paired-comparison method of ranking is more systematic and reliable than the card-sort method. Under this plan the rater compares each job with every other job to be rated. The simplicity of the ranking process is a decided advantage of this process over other job evaluation processes. There are disadvantages to this process, though, because it is difficulty to explain to employees why one job is ranked higher than another and how much difference there is between a job of one rank and a job of the next higher rank. If the jobs of the organization are few in number, if the reason for the differences in job value are clearly distinguished between ranks, and if wage and salary differentials are small, a ranking process may serve quite well the objective of the design of an equitable internal compensation structure. A compensation structure is simply a hierarchy of jobs to which rewards (wage or salaries, fringes, etc.) have been attached.

The job classification or grade-description process of evaluating jobs has the appearance of greater objectivity than the ranking method, because this plan specifies that job classes or grades of jobs must be established and described in writing in advance. Once job classes have been described, the next step is to compare information about each job being evaluated with the job class descriptions, and then a judgment must be made about the best fit between the job descriptions and class descriptions. The U.S. Civil Service Classification system is one of the oldest classification systems in existence. The lower-numbered classes contain the lower-valued jobs. This system includes more than eighteen job classifications, with the lower-numbered classes being of the lowest value. In industrial practice the opposite is often found; the lower-numbered classes are the high-valued jobs. As was mentioned when discussing the ranking system, jobs are first divided into job clusters if the number of jobs is large, and the number of classes may vary from one cluster to another. For example, clerical job clusters may have fewer grades than factory jobs. First, then, jobs are placed in a job cluster. Next, jobs are placed within a job class or job grade. Finally, jobs within a grade may be ranked. Minimum and maximum wage or salary rates are assigned to labor grades; however, the problem of pricing jobs within classes still remains to be solved, and the problem of what to pay the individual remains to be solved. Individuals, not jobs, receive paychecks.

Item 3: Quantitative Process of Job Evaluation. There are two quantitative processes of evaluating jobs: point and factor comparison. The point system of job evaluation is probably the most prevalent system in use today. The steps in this process are as follows: First a managerial judgment is made about just what it is the organization is paying for. For example, to illustrate this point, this question may be asked: "Why do we pay a comptroller more than a custodian?" One reason, of course, is that the comptroller's job is higher in terms of responsibility requirements than the job of custodian. Still other factors, common to all jobs to be evaluated, must be selected, defined, and weighted in terms of importance to the objectives of the organization. Skill, responsibility, educational requirements, and working conditions are factors commonly used. These factors might be weighted as follows: Skills, 50%, Responsibility, 20%; Education, 10%; Working conditions, 20%. If such weights were used, this would tell us that the organization in question is certainly paying for skill. In summary, organizations pay individuals for two things: what they bring to a job, in terms of education, training, and experience; and what they put into a job, in term of physical and mental efforts. Usually, various degrees of each factor are carefully defined and written down, and points are assigned to each degree so established. Secondly, information about each job to be evaluated is collected, and then comparisons are made of this information with the factor degrees established; then, a total point value is assigned to each job. This process has the appearance of great objectivity; however, it should be clearly pointed out that value judgements are made in regard to the selection of factors, their weights, and their definitions; and still other value judgements are made when information about a particular job is given a pint value, True, these are value judgements; however, this should not imply that the decisions are arbitrary and capricious.

As is true of all systems of job evaluation, the process by which judgements are made, and the person by whom judgements are made, may be more important than the particular system used. A major objective of all job evaluation systems is to establish an equitable internal wage and salary structure the employees will perceive to be equitable. An internal structure is a hierarchy of jobs to which wage rates have been attached. Equity is a perceived phenomenon; therefore, to be successful, job evaluation systems almost always require some involvement of employees from almost all major employee groupings. This is particularly true of the factor comparison system of job evaluation.

Like the point system of job evaluation, the factor comparison plan, as the name implies, provides for the selection of factors deemed important to the goals of the organization, i.e., skills, working conditions, and so on, Then key jobs are selected. Key jobs are those benchmark jobs, at all levels of the job clusters being considered, that the job evaluation committee agrees are now properly defined and now properly priced. Next, the total price of each of these jobs is distributed over the factors that have been selected. For example, let us assume that there are some twenty jobs to be evaluated. Furthermore for simplicity's sake, let us assume that only three factors have been selected, though usually at least five will be used. In the accompanying tabulation the total price of each job has been distributed over the compensable factors assumed. Note that a high-, medium-, and lower- priced key job has been selected. In addition to skill, responsibility, and working conditions, mental and physical abilities are often used. After the key jobs have been selected, the job evaluation committee will then compare each of the remaining seventeen jobs with one or more jobs, factor by factor, and .place each new job evaluated on the scale. Each factor of each key job becomes a benchmark by which each factor of each job is compared.

The factor comparison process is somewhat similar to the point system, because in the final analysis a certain number of points (the wage rate) is assigned to each job. In effect, the standard definition of each factor is simply the definition attached to that factor for each key job. The factor comparison system is not as easy for employees to understand as the point system, but the system is in one respect superior to the point system . The factor comparison standards, the factors of key jobs, used for comparison are jobs that actually exist now in the organization. When the objective of an equitable internal wage structure is the goal to be accomplished, and when one considers that employees must perceive this structure to be equitable, then the importance of this difference between the point and factor comparison systems should not be overlooked.

It is emphasized that the method used to design and install the evaluation system is probably more important than the particular job. evaluation plan adopted. Detailed presentations about the merits of these various plans are available elsewhere, and the discussion here should be considered as nothing more than an introductory presentation. One thing is clear. If the plan is to succeed, high employee involvement is a necessity.

4.4 Performance Evaluation Systems

Systems for appraising performance are somewhat analogous to systems for evaluating jobs. Here we introduce four methods: paired-comparison; rating scale; checklist; and performance measurements.

The paired-comparison method of job ranking is similar to the man-to-man comparison method of employee evaluation. Under the paired-comparison method of job ranking, each job is compared with each other job in the job cluster and then a rank order is established. Under the man-to-man comparison system of employee performance appraisal, information about the performance of each employee is compared with information about each of the other employees in the reference group, and a ranking of employees from high to low is established.

Likewise, the employee rating scale method of employee performance evaluation is similar to the point system of job evaluation. Under the rating scale plan various employee job performance factors are selected and defined. Next, information about an employee's job performance, in terms of each factor, is compared with the description of various degrees on a rating scale for each factor. A judgment is then made. The total of the various judgments made on each scale of comparison is the employee's overall rating. When rating scale is used, employees are compared with a standard (the factors deemed important to employee performance). In contrast, the employee comparison raking system ends with a decision about the performance of an employee relative to the performance of other employees in the group.

The checklist method of employee performance evaluation does not have a parallel in job evaluation. This method provide a list of adjectives which may be descriptive of various facets of an employee's performance on his job. The person performing the performance evaluation checks those words, or phrases, which in his judgment describe the employee's performance of the duties and responsibilities which have been assigned. Then, a total score is computed. The person conducting the rating may not be able to infer what the total rating is going to be, because the value attached to each of the words. or phrases, on the checklist may not be available to him. This tends to ensure objectivity on the part of the rater.

The performance measurements method does not have a parallel in job evaluation too. This method is the one in which either actual measurements, or descriptions, of performance are used. Ideally, if the actual output of each employee could be measured, the problem of performance evaluation would be almost completely solved. Unfortunately, this cannot be done. Machines as well as men contribute to employee productivity. Men also work with other men, and the product produced is more often than not the result of joint factor efforts. Furthermore, modern technology seems to be demanding larger and larger capital- intensive work organizations, and in these organizations an employee may have little influence over the rate at which output is produced. In such organization it is impossible to measure accurately the output of each employee.

5. Professional Development

5.1 Matching Individual and Organizational Needs

Traditionally, organizations have engaged in HR panning and development. This activity involves charting the moves of large numbers of employees through various positions in an organization and identifying future staffing needs. Career-development (professional-development) programs with greater emphasis on the individual introduce a personalized aspect to the process. Such programs typically involve several specific activities including career counseling, career pathing, training, computerized inventorying of backgrounds and skills, and job posting.

In an ideal system for HR planning and development, individuals would seek to match a particular organization's HR needs with their own needs for personal career growth and development. According to Schein, the basic system can be depicted as involving both individual and organizational planning and a series of matching activities that are designed to facilitate mutual need satisfaction. It is also assumed that both individual and organizational needs change over time.

5.2 Creating Favorable Conditions

While a career-development program requires many special processes and techniques, some basic conditions must be present if it is to be successful. A favorable climate for the program is created by these conditions--management support; goal setting; changes in HR management policies; and announcement of the program.

Condition 1: Management Support. If career development is to succeed, it must receive the complete support of top management. Ideally, senior line managers and HR department managers should work together to design and implement a career-development system. Managerial personnel at all levels will then need to have training in the fundamentals of job design, performance appraisal, counseling, and career planning. With such training as a background, managers and supervisors are prepared to become career developers.

Condition 2: Goal Setting. Before individual can engage in meaningful career planning, they must have a clear understanding of the organization's goals. Otherwise they may plan for personal change and growth but not know if or how their own goals fit those of organization. If individuals are to plan their futures, the organization must also have a strategy. For example, if the technology of a business is changing and new skills are needed, should the company retrain to meet this need or hire new talent? Is there growth, stability, or decline in the number of employees needed? How well turnover affect this need? A definite plan is essential to support individual career planning.

Condition 3: Changes in HR Management Policies. In order for a career-development program to be effective, it may be necessary to alter an organization 's current HR management policies. For example, a policy of lifelong job rotation can counteract obsolescence and maintain employee flexibility. Another policy that can aid development involves job transfers and promotions.

A transfer involves the placement of an individual in another job for which the duties, responsibilities, status, and remuneration are approximately equal to those of the previous job. A transfer may require an employee to change work group, work place, work shift, or organization unit; and it may even necessitate moving to another geographic area. Transfers make possible the placement of employees in jobs where there is greater need for their services and provide an opportunity for the employee to acquire new knowledge and skills. A downward transfer, or demotion, relocates an individual to a lower-level job that can provide developmental opportunities but is ordinarily considered unfavorable, especially to the individual who is demoted. it is important, therefore, that an employee who is demote be given whatever assistance possible.

A promotion involves a change of assignment from a job at a lower level to one at a higher level within the organization. The new job is normally one that provides an employee with an increase in pay and status and demands more in terms of skills or responsibilities. Promotions permit an organization to utilizes the skills and abilities of individuals more effectively, and the opportunity to gain a promotion can serve as a incentive. The two principal criteria for determining promotions are merit and seniority. In given recognition to merit and seniority, the problem is to determine the degree of recognition that should be given to each of the factors. Even when not restricted by a labor agreement, management may find itself giving considerable recognition to seniority because of the difficulties of effectively measuring relative merit and of effectively communicating to employees that the measurement is accurate and fair.

Relocation services are needed because transfers and promotions require the individual to adjust to new job demands and usually a different work environment. Those transfers that involve moving to a new location within a country or abroad pose greater demands. Employees are required to adapt not only to the new work environment but also to new living conditions. Employees who are married and those with children have the responsibility of helping family members to adjust to the new living arrangements. While employers are providing all types of relocation services, including moving, selling a home, cultural orientation language training, and other assistance, there is a loss of production time. Pretransfer training whether related to skills or to life style, has been suggested as one of the most effective ways to reduce lost production time.

Outplacement services now are provided by many organizations to help terminated employees get a job somewhere else. This service can be used to enhance a productive employee's career, as well as to terminate an employee who is unproductive. If an organization cannot meet its career-development responsibilities, HR policy should provide assistance to the individuals in obtaining more suitable career opportunities. For the unproductive employees, it is a way of terminating them that preserves their dignity, recognizes their past contributions, and enable them to find a new job quickly and relatively painlessly. Professional outplacement counseling as an organized profession is of fairly recent origin. It is been added to many employee benefit packages as another form of employee assistance. The skills that are needed for outplacement counseling, as well as other types of counseling, could be found in many related books.

Condition 4: Announcement of the Program. The career-development program should be announced widely throughout the organization. The objectives and opportunities can be communicated in several ways, including: publication in newsletters; inclusion in employee manuals; publication of a special career guide or as part of career-panning workshops; and videotaped or live presentations. At a minimum, a book that spells out the basic job families, career-progression possibilities, and related requirements should be given to each managers.

5.3 Inventorying Job Opportunities

While career development usually involves many different types of training experiences, the most important influences occur on the job. It is there that the individual is exposed to a wide variety of experiences, and it is there that contributions are made to the organization.

It is important that the jobs in an organization be studied carefully to identify and assign weights to the knowledge and skills that are required. This can be achieved by using job analysis and evaluation systems such as those used in compensation programs. The system used at Sears measures three basic competencies for each job: know-how, problem solving, and accountability. Know-how is broken down into three types of job knowledge: technical, managerial, and human relations. Problem solving and accountability also have several dimensions. Scores for each of these three major competencies are assigned to each job, and a total value for each job is computed. For any planned job transfer, the amount of increase (or decrease) the next job represents in each of the skill areas, as well as in the total point values, can be computed. This information is then used to make certain that a transfer to a different job is a growth-demanding assignment. Sears designs career-development paths to provide the following experiences; an increase in at least one skill area on each new assignment; an increase in at least 10 percent in total points on each new assignment, and assignments in several different functional areas.

Once the skill demands of jobs are identified and weighted according to their importance, it is then possible to plan job progressions. A new employee with no experience is typically assigned to a "starting job". After a period of time in that job, the employee can be promoted to one that requires more knowledge and/or skills. While most organizations have concentrated on developing job progressions for managerial, professional, and technical jobs, progressions can be developed in all categories of jobs. These job progressions then can serve as a basis for developing the career paths--the lines of advancement within an organization--for individuals. many organizations have prepared interesting and attractive brochures to describe the career paths that are available to employees. In a large multinational corporation, one must be prepared to move geographically in order to advance in a career field. General Motors Company of USA has prepared a Career Development Guide that groups jobs by fields of work such as engineering, manufacturing, communications, data processing, financial, personnel, scientific, and others. These groupings enable an employee to obtain a better understanding of the career possibilities in the various fields of work.

There are likely to be points in an individual's career path where training beyond that received on the job is essential. Such points should be identified and appropriate training made available to prevent progress from being impaired by a lack of knowledge or skills. Differences in the training needs of individuals concerning their jobs require that these needs be monitored closely.

5.4 Determining Employee Potential

Probably the most important phase of any career-development program is that of determining the potential of employees for success in one or more career paths. These objectives may be achieved in various ways. All of them, however, involve the participation of the employees concerned. According to an American Management Association survey, informal counseling by HR staff and by supervisors is used widely. In many companies, communication on educational assistance, AA/EEO programs and policies, salary administration, and job requirements are also basic practices. Career-planning workbooks and workshops also are popular as a means of helping employees identify their potential.

Several organizations use workbooks to guide individual employees through systematic self-assessment of values, interests, abilities, goals and personal development plans. General Motors Company's Career Development Guide contains a section on "What do you want your future to be?" in which the individual makes a personal evaluation. General Electric Company has developed an extensive set of manuals for its career-development program, including two workbooks foe employee exploration of life. issues that affect career decisions. Syntex's workbook, How to Work for a Living and Like It, may be used by an individual or in a group workshop. Some organizations prefer to use workbooks prepared for the general public. popular ones include Where Do I Go from Here with My Life? By John Crystal and Richard N. Bolles--a workbook follow-up to What Color Is Your Parachute? by Richard N. Bolles. Career Strategies: Planning for Personal Growth by Andrew H. Souerwine and Self-Directed Search by John Holland are also popular. These materials have considerable appeal and are recommended to students in planning their own careers.

Workshops provide experiences similar to those available in workshops. They have the advantage, however, of fostering discussion and providing for a comparison of attitudes, concerns, and plans. Some of them focus on current job performance and development plans. Others deal with broader life and career plans and values.

The AMA survey of company practices found that counseling is used widely in career development. Career counseling involves discussing with employees their current job activities and performance, personal job and career interests and goals, personal skills, and suitable career-development objectives. Such counseling is usually voluntary for employees, although it may be included as .part of an annual performance appraisal. Counseling may be provided by the HR staff, superiors, specialized staff counselors, or outside professionals.

6. Training Methods and Trainers

6.1 Training Methods

In the study of employee training methods, the most widely used techniques of training was on-the-job training, used almost 97 percent of those firms with training programs. Under study or “assistant to” techniques were used by 61 percent. Job rotation was used by 60 percent, and 57 percent used courses and sessions. New methods or improvements of old methods and techniques are appearing frequently. These developments make a trainer' job harder in sense that he has the problem of picking the most effective method from among a large number of choices. New developments in the hardware used in the education or training can provide more student participation and allow more autonomy with respect to the person's own rate of learning. It can also provide a situation in which a better student-teacher relation can evolve.

6.2 Trainers

The success of any training effort will depend in large part upon the teaching skills and personal characteristics of those responsible for conducting employee training. What separate the good trainers from the mediocre ones? Often a good trainer is one who shows a little more effort, demonstrates more instructional preparation, or takes extra time to plan the training session. However, good training activity is also influenced by the trainer's personal manner and characteristics. According to Donaldson and Scannell, trainees list the following factors as traits of successful trainers:

Knowledge of subject. Employees expect managers to know their job or subject thoroughly.

2. Adaptability~ some individuals learn faster or slower than others, and instruction should be matched to the trainees learning ability.

3. Sincerity. Trainees appreciate sincerity, particularly for employees as individuals.

4. Sense of humor. Learning can be fun. Very often a point can be made with a story or anecdote.

5. Interest, A good trainer is interested in the subject being taught. this interest is keen and readily felt by the employee.

6. Clear instruction. Training is accomplished more quickly and with greater retention when trainers give clear instructions.

7. Individual assistance. When training more than one employees, successful trainers always provide individual assistance.

8. Enthusiasm! A dynamic presentation and a vibrant personality shows trainees that the manager enjoys training. Employees tend to respond positively to an enthusiastic climate.

7. Post Evaluation of Training

7.1 What Should Be Evaluated?

Training is traditionally designed to produce immediate change in employee job performance. its focus is on the job. The purpose of training is to narrow gaps between what job incumbents should know or do and what they actually know or do. Training is a very short-term change effort.

Evaluation pervades all aspects of training. It guides decisions to use training to correct a performance problem rather than use some other improvement strategy. This is called front-end analysis. It influences the preparation of test items matched to instructional objectives. It is used in field-testing instruction before and after widespread adoption, and even during instruction. However, evaluation is perhaps most often associated with post-instructional assessment.

7.2 Front-end Evaluation (FEA): The Traditional Approach

FEA is the bridge between recognizing a need and deciding what to do about it. The goals of FEA are to isolate performance problems that have potentially high economic "worth"; isolate precise performance deficiencies within the problem area that account for the greatest loss; increase the probability that the solution to a given problem is effectively by matching the cause of the problem to the propriety type of remedy; increase the probability that the solution selected is the most cost effective; isolate the root cause of the performance problem; and increase the probability that there is a match between the precise performance deficiency and the individuals who have the deficiency. it is thus intended to correct the most glaring human performance problems in the most cost-effective manner.

It is necessary to clarify the precise nature of the performance problem, its cause(s), appropriate solutions, and costs of appropriate solutions. These issues are important, because not all problems should be addressed by training. The costs of solutions are worth considering because training is expensive: it means lost work time and substantial investments in materials and design. There is no point in wasting money: some problems can be solved through means other than training--such as job aids, automation, or job redesign. The cheapest alternative should, of course, be favored. To clarify the nature of a performance problem and possible solutions, practitioners should ask such questions as: Do we have a problem? How will we know when the problem is solved? What is the performance problem? What is the range of possible causes of the problem? What is the precise probable cause of the problem? What general solution is indicated? What are the relative costs, and development time of each solution? What are the constrains? and What are the overall goals? Answers to these questions help clarity whether training is an appropriate solution.

In sorting out instructional from noninstructional needs, HRD practitioners should apply four acid tests: Management Commitment--Do managers view a problem as important enough to warrant attention?; Resources-- Are adequate resources available to meet the need? If not, are managers willing to provide funds, staff, time, and materials?; Skills--Do HRD practitioners possess necessary skills to meet the need? If not, can they identify people who do possess the skills from inside or outside the organization? Are they free to contract for needed skills?; and Costs versus benefits--Will costs of solving a problem produce greater benefits than alternatives, like taking no action or selecting a different solution?

Of these tests, cost-benefit analysis is most important-- and most difficulty. It is important because HRD practitioners are often faced with the necessity of convincing managers that training is worth the costs associated with it. A cost is understood to mean both direct expenditures such as funding required to analyze a problem, develop, deliver, and evaluate instruction; and indirect expenditures on salaries, lost production time, and facilities rental. Benefits are estimates of increase production or cost savings. They can be calculated per employee and then multiplied over the number of trainees. calculating cost-benefit ratios is difficulty because they are simple estimates that are easily challenged. It is not all that clear what cost or benefit categories should be used, since even experts defer on this point.

7.3 Front-end Evaluation: The Strategic Approach

One major problem exists with the traditional approach to FEA: it assumes that any performance problem can be judged using information about present conditions and present cost-benefits. That assumption is not always valid; Changes inside or outside an organization may gradually increase or decrease the importance of a performance problem--or even alter the nature of it. consider a simple example. Suppose that production output is below standard in one work group. Upon further analysis, HRD practitioners determine that the problem is attributable to lack of employee skills. for simplicity's sake, assume that new machines are being introduced gradually.'Even experienced workers do not know how to use them. A simple front-end analysis of this problem may or may not demonstrate a present need for training. However, common sense dictates that production levels will probably remain below standard until all new machines are introduced and, assuming no formal training is provided, workers learn from trial and error how to use the machines. In this example, a traditional approach to FEA does not tell the whole story. The performance problem is not severe at present--but it may well become more severe as new machine are introduced. Experience is not an adequate gauge for judging how long it will take for production levels to reach or exceed normal, unless similar machines were introduced on a similar production line at another company facility some time before.

If HRD practitioners wait around for this performance problem to reveal itself, valuable production output will be lost. Nor will it be easy to estimate how much output will be lost. Even supervisors may not be convinced under present conditions that training is necessary. What then? Is HRD forced into a reactive mode, unable to respond until the performance problem is apparent to everyone and managers are willing to support organized instruction on new machine? The answer to these questions is "not at all". The HRD practitioners has to demonstrate beforehand that the problem will exist, will affect production, and will lend itself to solution through training. How is this accomplished? There are several ways: Through Direct Persuasion--HRD practitioners can go to the people, including the production managers, the foreperson, and workers, affected by the problem to discuss the problem; Through Indirect Persuasion --Practitioners can find analogous situation and then remind managers of historical events and point out similarities between and show supervisors or managers what the problems are. If this is not possible, they can shoot a videotape and show it to key decision-makers.

The purpose of future-oriented FEA is to anticipate future performance problems before they come up and determine the most effective means of averting them. To understand a future -oriented FEA, HRD practitioners: scan trends in work flow and work methods at the operational level; isolate areas in which changes are likely to occur; pinpoint changes which are likely to be most costly in the future; separate noninstructional from instructional needs; consider alternative strategies for averting a performance problem; isolate root causes of anticipated problems--such as changes in technology, job, or work group redesign, new products, or job duties; and point out the likely problem to managers and supervisors, gaining their support to avert future performance problems. If these steps are followed, HRD practitioners will find that their mode of operation is proactive. Planned learning activities will anticipate and help avert problems before they arise.

7.4 Post-instructional evaluations: Traditional Approaches

Post-instructional evaluations are conducted, as their name suggests, after a training course or program has been delivered. They overlap with other forms of training evaluation. Donald Kirkpatrick; conceptualized a classic way of viewing post-instructional evaluations by arranging possible results of training on a four-level hierarchy of change. In ascending order, these levels are: Reactions--How much did trainees like a course? How much do they feel it will help them improve their job performance?; Learning--How much knowledge or skills change resulted from a course: How well did participants achieve the terminal objectives of the course?; Behaviors--What changes in job behaviors resulted from training? How much are workers applying what they learned in a way that is measurable and observable?; Results--What changes in job results are attributable to training? How much more productive are trained than untrained workers? What differences in productivity levels stem from training?

Reactions are undoubtedly measured most frequently, often by means of attitude surveys--so-called participant evaluations--handed out at the end of courses or sessions. Participants are typically asked to respond to questions like those above. While reaction surveys may indicate feelings, they do not really address bottom-line results. Another way to evaluate reactions is to send trainees a survey about one to six months after their participation in a training program. Sometimes their views change as they acquire more experience or reflect on course content.

Learning, the second step in Kirkpatrick's hierarchy of change, is measured by tests. During instructional design, one test item--or more than that--is written to correspond to each instructional objective. After test items are developed, instructional content (subject matter) and delivery methods (means of presentation) are chosen. The result is a direct link between intentions for end-of-course change as expressed in terminal objectives and test items for measuring them. Most people think of written tests, which are sometimes called paper-and-pencil tests. However, tests may also be administered orally or through demonstration of knowledge or skills. What could be better way to prove mastery of learning objectives than to perform what was learned? Frequently, demonstration involves assembling or disassembling machinery--or some other physical object. To demonstrate skill or knowledge mastery with data (as in mathematics), trainees may be asked to solve a problem. To demonstrate skill or knowledge mastery with people, trainees may be asked to participate in an experimental exercise--a simulation, a role play, or a case study. Tests need not be administered only at the end of a course, though that is appropriate if the intent is to measure end-of-course learning. They may also be given to trainees before instruction to measure entry knowledge or skills. Sometimes pretests are used for screening purpose to ensure that learners possess adequate entry skills, meaning that they have satisfied prerequisites. Tests may also be given periodically during a course to determine how well learners are progressing.

Behavior, the third level in Kirkpatrick's hierarchy of change, are measured on the job rather than at the end of a course. This distinction is important, because trainee job behavior is affected by much more than instruction. It is also affected by individual motivation, peer pressure exerted by coworkers, expectations of supervisors, and much more. It is possible for a trainee to complete training successfully--and never change behavior on the job. There are several ways to assess changes in job behaviors produced by training, what some call simply transfer of learning. To list a few: ask the learners, their coworkers, supervisors, or subordinates if training has influenced job behavior; show up at the work site and ask former trainees to. demonstrate how they are using what they learned in training; observe former trainees at work both before and after training, noting any changes in observable work methods; and compare job behaviors of former trainees and a control group of similar but randomly-selected non-trainees using predetermined criteria. To phase it another way, behavioral change on the job can be measured through the opinions of trainees. or other people, through tests of learning conducted at the job site, through work sampling of behaviors, or through evaluation design. Obviously, the first job is the easiest but least valid and reliable, because opinions are not necessary accurate. The fourth method is most valid and reliable, but is also the most costly and time-consuming.

Results, the fourth level of Kirkpatrick's hierarchy of change, are also (like behaviors) measured on the job rather than at the end of instruction. Results are the real bottom-line: did training change on-the-job output or quality? To address this difficulty question, HRD practitioners must identify before training what results they will attempt to change; how much change they will try to achieve; and how they will analyze and interpret change.

7.5 Post-instructional Evaluation: The Strategic Approach

It is difficulty to predict post-instructional outcomes of training. For this reason, practitioners should improve an area they have too often neglected during instructional design--analysis of the work context. Before training is delivered and during needs assessment, practitioners should carefully examine the work setting. Just what are the accepted norms of behavior? What does a supervisor believe his or her employees need to know? What rewards or punishments are likely to affect application of new methods on the job?

Once these questions have been addressed, practitioners should gear their efforts as closely as possible to conditions likely to exist when trainees return to the job. If barriers to application exist, they should be identified during training. Trainees will have to be furnished with methods to help them to eliminate the barriers or apply instruction despite barriers. While this is quite difficulty--especially when trainees attend from a cross-section of work groups rather than only one--it is not possible. SD practitioners should enlist the support of others back on the job site, such as experienced workers who have attended training in the past or supervisors who have a stake in performance improvement. These supporters serve as on-the-job coaches who facilitate application of training.

7.6 Comprehensive Reviews of Training

There is little point in distinguishing between traditional and future-oriented approaches to comprehensive reviews of all training courses. There are two good reasons why. First, few organizations develop a long-term learning plan or training curriculum by job class. Second, evaluation is relatively rare. In short, there is no training curriculum and little evaluation.

Before a comprehensive review of training can be conducted in an organization, several preconditions must be met. First, a curriculum must exist. That means that HRD practitioners have succeeded in planning for long-term training needs in each job class. Second, the purpose of the training curriculum must be stated. Why does it exist? Third, the goals must also be stated. What results are sought from training for each job class and for all job class taken together? Fourth, each training program must be systematically planned and evaluated. Fifth, each training program should simultaneously reflect: job requirements for its targeted learners; organizational requirements and priorities; and organizational strategy for HRD. Sixth and finally, the evaluation results of each training program should be collected and stored program-by-program;

learner-by-learner; and job class-by-job class. Perhaps the most important preconditions are the first, fourth, and sixth. A curriculum must exist before a comprehensive review of training can be carried out. Each training course or other planned instructional event must be planned and evaluated so that information is available about each program. This information must be recorded in a way that allows data to be compared and aggregated over time.

To carry out a comprehensive review of training, practitioners should begin by setting a policy that such reviews will be conducted at periodic intervals--every or two. A training advisory committee, composed of representatives from the ED department, line management, top management, and trainees, can be especially useful. This committee directs studies, participates in them, and/or receives results and makes recommendations for corrective action. Regardless of who is involved, however, it will be necessary to clarify the purpose, goals, and objectives of the review; select people who possess the skills necessary to carry it out; establish an evaluation plan; and clarity precisely what will be done with the results once they are received. In most respects, a comprehensive training review is approached like any evaluation study. The only key difference between it and most studies has to do with focus. It focus on the overall training plan for each job class or all job classes in the organization.