The functions and elements of a training system

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"From a systems point of view, the design of an operation which can successfully carry out the training function becomes a problem of creating a system to accomplish a given end result or objective. In the case of training, this end result is to effect a group of planned and predetermined behavior changes in the organization."

The following are five basic functions that I feel are essential for an effective training system that will allow you to effect that group of predetermined behavior changes:

I. Training Analysis
II. Educational Consulting
III. Training System Support
IV. Public Relations
V. Management

The elements of each of these functions become the procedures necessary for the successful operation of the entire training system. To better understand these five basic functions it is necessary to look at their elements.

The training analysis function (Figure 1) and its elements is the critical activity in determining training requirements.

We begin the analysis by gathering valid data. That is, in terms of performance, what is it you want the trainee to do that he is not now doing, or what is it you want him to do better? Determine whether these are basic skills and knowledge he should possess or whether they are supplemental skills and knowledge that will upgrade his proficiency. This may determine the priority of training.

The second element in the training analysis function is to address performance standards by conducting a deficiency analysis. At this point the following determinations must be made:

1. Is this a training problem?
2. Is this a feedback problem?
3. Is this an attitude problem?
4. Is this due to a lack of resources?
5. Is this due to a lack of reinforcement?
6. Is this a procedures problem?

When this element of the training analysis has been completed, the suggested solution to the initial request or desired end result may be made. If the suggested solution is to develop a training curriculum, the third element in the training analysis, that of stating the terminal behaviors, begins.

Once this has been accomplished, the design of the training curriculum proceeds. It is at this point that the cost of training, the length of training, the media, the method of evaluation, may be determined.

The implementation and evaluation of the training curriculum may end the analysis function. If the desired end result was not obtained, it may be due to a bad analysis or a poor design. Whichever is the case, a reiteration through the process is essential. If the desired end result has been met, the final element is to maintain the material. That is, if it is a one time only curriculum, it is placed in a history file. If it is an ongoing curriculum, it is kept up-to-date.

When the suggested solution, the second element, is not the design of a training curriculum, the Educational Consulting function becomes crucial. Figure 2 illustrates the elements of this function. It differs from the training analysis in that the training person acts only as an advisor, i.e., he can suggest solutions but is not accountable for implementation or evaluation. Figure 3 lists some of the skills and knowledge necessary for successfully performing the consultation function. The questions asked during the follow-up emphasize the advisory capacity of the consultant.

The third function of the training system, Training System Support, is basically an administrative and maintenance activity. However, the support is essential for a training division if it is to effectively serve and
assist its users. The elements of this function are exhaustless, but three of these elements are vital.

Record keeping provides an historical reference for each student and aids in defining what courses he must yet complete in terms of his career development. Record keeping is of great importance also in prepa-
ing a cost per student figure, developing and justifying
a yearly budget, and forecasting resources. Figure 4
illustrates such a form.

Equipment maintenance is necessary for an effective
and efficient training facility. It doesn’t matter if the
facility has only a one person training staff, a conference
room, and an overhead projector, or is a large scale
multi-media facility with a full-time training staff.
Calvin R. Gould, put it this way:

A national meeting of professional communica-
tors was ending its second day with a banquet
that featured a learned and distinguished
individual. Before the banquet, the speaker’s
assistant set up a pair of 35mm projectors
and a screen. This person would be the pro-
jectionist and would work from a cued copy
of the speech. While this practice requires
that the speaker read his material, it is more
effective than asking for each slide, and if well
rehearsed, can be professionally done. The
audience quite properly expected a worthwhile
message from the speaker, a vice president
of a large manufacturing company. They
weren’t to be denied. His initial remarks,
charging the audience with their responsibility
to world communications, proved he was going
to be a dynamic speaker. As the first slide
was projected the house lights went off right
on cue. Everything was working like clock-
work, even the pause that followed the first
slide seemed effective and timely . . . except
it seemed to be longer than necessary . . .
really too long. Finally the audience, the
projectionist, and the speaker all seemed to
realize simultaneously that the speaker’s
lectern light went out with the house lights.
The fifteen minutes interruption required to
recover from this unfortunate situation was
enough to seriously damage the communica-
tions effectiveness of this presentation. I was
in the audience, and I have long forgotten
the message.

A schedule for the maintenance of equipment must
be established, fully documented and enforced. It should
include timetables for the changing of bulbs, the clean-
ing of equipment, periodic maintenance checks, etc.

Inventory control is important, since in the majority
of installations the training division has equipment that
can be borrowed by other departments. The unavail-
ability of equipment can often lead to the cancellation
of a class. The availability of existing equipment should

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Figure 5—Inventory and status report

be documented by an inventory and status report
form. Figure 5 illustrates the form used at Bankers
Trust.

The Public Relations function has two distinct ele-
ments. Within the organization, communication is with
users of data processing training. The promotion of
in-house courses and the selling of services are necessary
in order to establish and maintain credibility. The
external element is, on the one hand, to let the rest of
expert in management philosophy or management development, yet find it necessary to manage a training system, I offer the following descriptions of the four elements in the management function from Louis A. Allen, president of Louis A. Allen Associates, Inc.

I. Planning

"Planning is the work a manager does to master the future. Planning requires that a manager think before acting. In the process of doing this, he will map out beforehand what he expects to accomplish, how he can best do it, and the limits of cost and other factors that are significant. The principles of planning stress the importance of current decisions in limiting our potential range of action in the future.

They point out that the further we project a plan into the future, the more unstable and un­dependable it becomes. A key principle emphasizes the tendency of people to resist changes. Resistance to change can be overcome primarily by providing for participation and communication in the planning process. Plans are considered in terms of the specific activities of forecasting, establishing objectives, establishing programs, scheduling programs, allocating resources, setting policies, and establishing procedures." 3

Figure 6 illustrates how our training staff at Bankers Trust interprets this element.

II. Organizing

"Organizing is the work a manager does to arrange and relate the work to be performed so that it can be carried out most effectively by people. An organization is not people but the mechanism arranged to enable people to work most effectively together. An organization chart is helpful but the chart itself is not the work of..."
organizing, for this is how one insures that the most work is accomplished by the fewest people at the least cost.”  

Figure 7 illustrates the organization of our training division.

III. Leading

"Leading is the work a manager performs to get people to take required action. Leading is the energizing function that makes planning, control, and organizing possible. In studying what it takes to lead, we find that there is no one best management personality. The proper blend of authoritarian and democratic leadership knowingly applied is best. The specific activities within this function are decision making, communications motivating people, selecting people, and the development of people. We are at the present time within our element of control. A lot of work has yet to be accomplished so that these two elements of management will relate directly to our responsibilities.”

IV. Controlling

"Controlling is the work a manager does to assess and regulate work in progress and completed. The control is the manager’s means of checking up. While control by personal observation is often necessary, the most desirable method is control by exception. Here the principle of Least Cause and the principle of Point of Control are important to ensure that the greatest amount of control is applied where it will do the most good. The significant activities inherent in good control are establishing performance standards, performance measuring, performance evaluating, and performance correcting.”

It is apparent that, due to the sheer length of the process, a training staff of more than one is desirable. However, given that the training needs are clearly defined and not too abundant, and that time and money are available, such a process can be implemented effectively by a minimal staff. To a great extent, this is due to the increasing availability of vendor-supplied training materials, and also to new, multi-media techniques for its presentation.

To properly select media that will meet training objectives, one must understand the advantages and disadvantages of each. The most commonly used (and misused) media are the spoken and written word. Several studies have indicated that we retain only 20 percent of what we hear. It has also been cited that the average student possesses a reading level of eighth grade or lower. Therefore, it is necessary for the trainer to know his students’ abilities and to adjust his communication methods accordingly.

The studies on learning further suggests that we retain 80 percent of what we see and as much as 95 percent of what we both hear and see. Thus, it appears that a lecture supported with various media would allow us to satisfy our objectives in the most efficient and effective manner.

It has been my experience, being fortunate enough to have access to a very sophisticated multi-media training facility, that the integration of various media into our training system has accomplished several things:

1. This integration makes use of two or more senses and
2. More easily establishes a relationship between the unknown and the known.
3. Often, visuals can save teaching time because they add to the student’s ability to arouse and retain interest in the subject.
4. Visuals tend to create a sense of involvement and participation.
5. When color is used in visuals, the retention rate is vastly increased.

There are certain obvious drawbacks when a training facility is heavily involved with the use of audio/visuals. I have stated earlier that the record keeping function is essential in the smooth and effective operation of a training facility; I would like to emphasize this importance when using audio/visual media. The hardware required for the use of audio/visuals must be maintained as “Operational” at all times. It is most desirable to have backup for each piece of equipment you are using; the consequences are self-evident.

Staff resources must often be increased to support a multi-media facility, e.g., for maintenance and administration. However, once standards and procedures are developed for maintaining and scheduling equipment, the advantages one can attain from the use of multi-media are considerable.

In summary, when selecting media for communicating to the learner, consider the following procedures:

1. Determine your training objectives first, then determine the means whereby you can convey them to the student.
2. Consider the physical constraints; how will they affect the media you have selected? How many students will you have at one time? Where will they be trained?
3. Determine as best you can the collective backgrounds and abilities of your students, and which media will have the greatest appeal and effectiveness for them.

4. Examine carefully the economics of the ideal system, i.e., look carefully at the cost of alternatives.

SUMMARY

A Training System (the process) is a methodology with established functions, procedures, and activities one can follow to effectively and efficiently achieve a desired result.

A properly evaluated multi-media system, when well maintained, will improve the learner’s ability to comprehend and retain the training supplied. This will allow the training division to accomplish its objective, that of giving the user of its services what he wants, when and where he wants it.

REFERENCES

1 M W Warren  
*Training for results*  
Reading Massachusetts Addison-Wesley 1969 p 15

2 C R Gould  
*Anatomy of a presentation*  
Audio-Visual Communications V June 1971 p 20

3 L A Allen  
*The management profession*  

4 Ibid p 173

5 Ibid p 246

6 Ibid p 324

BIBLIOGRAPHY

L A Allen  
*The management profession*  
New York 1964

M M Broadwell  
*The supervisor as an instructor*  
Massachusetts 1970

L Bennigson  
*The strategy of running temporary projects*  
Innovation Number twenty-four September 1971 pp 32-40

Hartman Matthes Proeme  
*Management Information Systems Handbook*  
New York 1968

O Glaser  
*The management of training*  
Massachusetts 1970

M W Warren  
*Training for results*  
Massachusetts 1969